

# AI-Powered Education: Innovative Teaching Strategies to Elevate Student Learning



# AI-POWERED EDUCATION: INNOVATIVE TEACHING STRATEGIES TO ELEVATE STUDENT LEARNING

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## ABOUT THIS PROJECT

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KAREN MAGRUDER, LCSW-S; ANN M.L. CAVALLO, PHD;  
AND ANDREW M. CLARK, PHD

### OVERVIEW

*AI-Powered Education: Innovative Teaching Strategies to Elevate Student Learning* is a collection of practical, step-by-step AI-infused teaching activities curated from University of Texas at Arlington (UTA) faculty across a range of disciplines. Recognizing the growing need for concrete guidance on integrating AI into higher education, this book serves as a hands-on resource for educators seeking to enhance students' learning and digital literacy by modeling ethical and effective AI use. Each chapter features detailed activities and assignment guides which can be adapted to a variety of teaching contexts. The AI activities presented in this book have been piloted across diverse fields, including business, communication, education, engineering, nursing and social work, demonstrating how AI can support transferrable skills such as communication, critical thinking, and creative problem-solving. Each chapter includes course context, an activity overview, detailed directions for both faculty and students, benefits to students and cross-disciplinary applications, making this book an essential guide for educators

aiming to bridge the gap between AI's theoretical potential and practical classroom implementation.

## CREATION PROCESS

This project was supported by an Innovation Grant from the University of Texas at Arlington (UTA) CARES grant program. The book editors recruited chapter authors from across the UTA campus via email announcements, communication at events and trainings, and direct asks, ensuring representation from a diverse range of disciplines. To capture a broad spectrum of teaching applications, the editors selected AI-infused activities that targeted a variety of learning outcomes. To streamline contributions and maintain consistency, the editors provided a chapter template outlining key components. Additionally, each chapter underwent a peer review process by each of the editors, who offered constructive feedback to enhance clarity, accuracy, and practical applicability before publication.

## ABOUT THE EDITORS

**Karen J. Magruder**, LCSW-S is an Associate Professor of Practice at the University of Texas at Arlington School of Social Work, where she brings a broad background in aging, mental health, and environmental justice to the classroom. A dedicated and award-winning educator, Karen is passionate about integrating evidence-based and innovative techniques to promote student success in online learning. Karen is also a Doctor of Social Work (DSW) candidate at the University of Kentucky, where she is studying the implications of AI for social work practice and education. She manages a small private ther-

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## ACKNOWLEDGMENTS

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## CHAPTER 1.

### INTRODUCTION

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#### **AUTHOR BIO**

Karen Magruder, LCSW-S is an Associate Professor of Practice at the University of Texas at Arlington School of Social Work, where she brings a broad background in aging, mental health, and environmental justice to the classroom. A dedicated and award-winning educator, Karen is passionate about integrating evidence-based and innovative techniques to promote student success in online learning. Karen is also a Doctor of Social Work (DSW) candidate at the University of Kentucky, where she is studying the implications of AI for social work practice and education. She manages a small private therapy practice, provides clinical supervision, and maintains a free social work education resources YouTube channel.

## INTRODUCTION

The rise of AI has been described as the fourth industrial revolution (French et al., 2021), and it demands attention from those in higher education. With the stroke of a keyboard, generative artificial intelligence (GenAI) tools like ChatGPT can provide users with comprehensive and concise information about virtually any topic, and even write “frighteningly good” essays (Kelly, 2022, p. 1). While such technological advancements hold the power to enhance student comprehension and generate ideas as a “digital muse” (Gesikowski, 2023, para. 1), there is also widespread concern about academic integrity implications (Dale, 2023). Additionally, overreliance on AI tools may diminish critical thinking (Gister, 2023), limit mastery of important concepts and jeopardizes instructors’ ability to assess learning. Despite these issues, educators are increasingly embracing this technology, finding innovative ways to harness AI to elevate teaching and even enhance critical thinking (Magruder, 2023a). So, how can instructors leverage AI so that they are more efficient, creative, and effective in the classroom? This resource guide provides various practical applications which educators can immediately implement in their course(s). Before looking at the applications, it’s important to provide some context about AI, including the limitations and opportunities for its use and defining key terms in the AI field.

## BACKGROUND

AI is a broad term encompassing a branch of computer



science that involves the development of algorithms and systems capable of performing functions that would have previously required human intelligence. These include learning, problem-solving, and processing the meaning of language (IBM, n.d.). Simply put, AI refers to computer systems designed to perform tasks that mimic human intelligence, such as visual and speech recognition, decision-making, identifying patterns, and language translation (Russell & Norvig, 2020). AI has been under development for many years, but beginning in November 2022 with the launch of ChatGPT there has been an explosion of public awareness and access to AI tools. Many Americans interact with AI without even realizing it. There are many technologies that integrate AI, including traffic navigation apps, healthcare data analytics, and virtual assistants like Amazon's Alexa and Apple's Siri.

Under the umbrella of AI, large language models (LLMs) are of particular interest for educators. LLMs are a form of generative AI, meaning that they generate new content that does not currently exist elsewhere based on unique user inputs or prompts (Trott et al., 2023). As the name implies, LLMs work by learning from vast amounts of written text from sources like the internet and published books (OpenAI, 2022). In addition to providing factual information, LLMs can handle creative tasks, from writing poetry and customized bedtime stories, to editing audio and video, to adjusting written work to fit a certain style, such as reworking scholarly writing for third grade reading level comprehension. Clearly, there are many possibilities for using AI in educational settings.

Much of the activities in this guide will center around

generative AI (GenAI), a subset of AI that focuses on creating novel content rather than merely analyzing or acting upon existing data (Zewe, 2023). GenAI most famously produces original text, but can also create images, video, and music. This technology is made possible by LLMs, those sophisticated AI systems trained on extensive datasets containing vast amounts of text in order to understand and generate human-like language (IBM, 2024). With these key terms in mind, this next section explores the benefits and drawbacks .

## **LIMITATIONS OF AI**

Before educators fully embrace AI, they should be aware of the pitfalls associated with these tools. For example, misinformation propagated through AI can mislead students and instructors alike, undermining quality education (Monteith et al., 2024). In fact, AI can produce hallucinations, in which the LLM provides false information such as fictitious citations (Alkaissi & McFarlane, 2023). Additionally, LLMs are trained on existing data. Therefore, biases that exist in the data are also embedded within AI algorithms, possibly perpetuating systemic inequalities (Agarwal et al., 2023). Overreliance on GenAI may also diminish students' critical thinking (Gister, 2023), limit mastery of important course concepts and jeopardize instructors' ability to assess true learning. Furthermore, issues of academic integrity are exacerbated by GenAI tools capable of producing high quality writing (Hodgson et al., 2022), raising concerns about plagiarism and cheating (Holmes & Porayska-Pomsta, 2023). Moreover, so-called AI detectors are notoriously unreliable (Sadasivan et al., 2023), leading to many universities ban-

ning their use (Ghaffary, 2023) and thus limiting professors' ability to enforce AI policies. Finally, AI holds the potential to further deepen the digital divide (Ben-Avie, 2024), leaving those without access to technology, or without more advanced technological skills, behind. AI certainly poses a challenge to educators, and considering the issue only with rose-colored glasses is unwise. However, as we will discuss there are many positive aspects to using AI.

## OPPORTUNITIES

AI can significantly improve both teaching and learning outcomes (Siau & Wang, 2020) as newly emerging AI technologies hold the power to enhance student comprehension and aid in idea generation (Gesikowski, 2023). It also holds significant potential to aid educators. For example, GenAI can help instructors create grading rubrics, simplify assignment directions, generate case studies, come up with discussion questions, generate video captions, and much more. Current research is pointing to AI as a means to quickly take care of mundane administrative work, freeing up time for other efforts that require a human touch (Daugherty & Wilson, 2018). For example, AI can create a template for letters of recommendation, generate ideas for specific types of emails, or provide proofreading assistance on research manuscripts. By taking advantage of what AI has to offer educators can focus their efforts on high impact tasks that involve direct student interaction. Overall, AI should be seen as a partner in learning which can and should be utilized in an ethical and responsible manner.

## LOOKING AHEAD

Educators should be careful not to prematurely leap to either a utopian or apocalyptic view of an AI-enhanced world (Boyd & Holton, 2018). Instead, professors and educational administrators should pragmatically assess how this technology can be ethically utilized to enhance learning. To actualize this vision, [we] must be prepared to capitalize on the advantages and address the challenges associated with its incorporation into the classroom (Magruder, 2023b).

This volume presents a series of activities that educators from a wide variety of disciplines at the University of Texas at Arlington have used to integrate AI in their courses. Keep in mind that use of any specific technology, software, or application should be approved at the institution level prior to implementation.

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## AI DISCLOSURES

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content may or may not be edited or modified by the author after it is generated.



## CHAPTER 2.

# INTRODUCING STUDENTS TO GENERATIVE ARTIFICIAL INTELLIGENCE

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### **AUTHOR BIO**

My name is Karen Bravo, PhD, MSN, RN. I have been a Clinical Assistant Professor in the College of Nursing and Health Information (CONHI) at the University of Texas at Arlington for six years and at other schools for 10-20 years. I am a Lead teacher in an undergraduate nursing course and am an instructor in the precepted nursing Capstone Clinical course. My background is in both the public and private arenas, including restarting the Nursing Program at Mountain View College (part of the Dallas College system) and multiple years in setting up clinics and Home Dialysis centers in the United States. My PhD is in General Psychology with an Emphasis in Integrating Technology, Learning, and Psychology, so my interests

are varied. Updating and encouraging students to be aware of technology and artificial intelligence is my current passion so I repeatedly ask students about their level of knowledge and try to give them newer updates and understanding.

## COURSE CONTEXT

This activity is designed to be adaptable to a variety of contexts, but it was originally designed with the following student population in mind:

- **Discipline:** BSN Nursing
- **Level:** Undergraduate
- **Course Name:** NURS 4323 Health Policy, Legal Aspects, and Informatics in Nursing
- **Modality:** Face-to Face
- **Context:** The above course introduces nursing students to health policy making, informatics and technology, and reinforces the legal aspects of nursing.
- **Number of Students:** 150-175

## ACTIVITY OVERVIEW

Generative Artificial Intelligence is a type of artificial intelligence that creates new knowledge/content using deep learning models programmed into the network. The following formative activities describe AI and provide an example of its use. This activity consists of a PowerPoint about GenAI with a completed GenAI-produced example. The prompt used is: “I have a job I am interested in but do not want to commit to until I do other interviews. Please devise a letter/email that keeps all the job interview options open.” The activity then includes a discussion of the inherent ethical and other issues in using artificial intelligence and what the student must know to avoid any pitfalls. Students must discuss the validity of the information, fact-check the outputs and the references for accuracy.

Following the example, students create a love poem using certain word prompts in either the free version of ChatGPT or Microsoft Copilot. The total assignment benefits creativity, critical thinking, and ethical behaviors related to the uses of AI. Many, if not most, other educational institutions/colleges may use this assignment. Although presented in undergraduate nursing, other educational areas or grades can benefit. For example, creating a difficult math problem, writing a computer program, or researching a history assignment.

## DIRECTIONS

### For Instructors

- A PowerPoint or oral discussion of the basic use of existing generative artificial intelligence is offered, to include the free version of ChatGPT and/or Microsoft's Copilot.
- An example of AI use is presented. For this example, the instructor shows a prepared document with the prompt "I have a job I am interested in but do not want to commit to until I do other interviews. Draft an email that keeps my options open." The AI's response would also be included. This example allows students to view the use of AI.
- A discussion follows on how to cite AI and the pitfalls of references.
- Students are reminded that they are responsible for the AI outputs as being legitimate (checking the sources quoted).
- Students must fact-check the outputs of AI (including references) to ensure that the facts are true.
- Students must cite ChatGPT or CoPilot accurately.
- After the presentation, ChatGPT or CoPilot is pulled up on the screen and students call out objects in the room, such as a banana or lollipop, to create a rhyming love poem. This demonstrates how instant results are produced and the quality

of the AI response, as well as the benefits to creativity.

### For Students

- After a PowerPoint presentation on Generative AI, students must fact-check the document example and verify the accuracy of the references.
- Next, students help create a rhyming love poem using objects in the class, such as a banana and a lollipop to see how instantly results are produced and the quality of the whimsical document.

### BENEFIT TO STUDENTS

- This is a formative assignment introducing the importance of keeping current in informatics, technology, and digital literacy. The assignment discusses the inherent ethical and other issues in using artificial intelligence and what the student must know to miss any pitfalls. Examples include the validity of references and content, whether references/content are peer-reviewed (or blogs or advertisements), was AI an allowable alternative to an assignment, are the references and citations APA styled, etc.
- Critical thinking is utilized to validate accuracy of the information presented.
- Creativity is also emphasized in the “love poem” section of the activity.

## ASSESSMENT

This is an ungraded in-class formative activity so no formal assessment will occur. However, students are given time to explore AI in class as a sandbox for future use. Students may use free versions of ChatGPT or Microsoft Copilot.

### CROSS-DISCIPLINARY APPLICATIONS

Any educational course could use this assignment. For example, writing code for a computer problem or getting help with a calculus question. Again, students must check the work outputs to ensure accuracy and cite AI performance correctly.

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## CHAPTER 3.

### USING CHATGPT FOR RUBRICS

---

JESS KAHLOW, PHD

#### AUTHOR BIO

Jess Kahlow, PhD is an Instructional Designer in the Center for Distance Education at the University of Texas at Arlington (UTA). She is also an Adjunct Assistant Professor in the Department of Curriculum and Instruction at UTA, where she teaches graduate courses in Instructional Learning Design and Technology. She also researches how technology impacts communication processes and experiences in professional and educational settings. In her free time, she likes spending time with her four pets (fun fact: she taught her dog, Henry, how to read).

## CONTEXT

This chapter applies to various contexts and has been used to create rubrics in various disciplines, including accounting, biology, communication, criminal justice, education, nursing, physics, political science, and social work. This has also been used in undergraduate and graduate courses and for various assignment types, including everything from short answer quiz questions to discussion boards to research papers.

### ACTIVITY OVERVIEW

After spending hours perfecting your assignment directions, you might be glad to just be done with that step; but an important—yet often overlooked—component of assignment design is rubric creation. This chapter discusses the benefits of rubrics for both instructors and students. Then, it outlines directions and an example of how to use OpenAI’s ChatGPT version 3.5 to make rubrics for your existing assignments.

### Why Use Rubrics

Rubrics are assessment tools that outline important criteria and expectations for specific graded assignments or



discussions (Andrade, 2005; Taylor et al., 2024). Rubrics are a way for instructors to communicate to students what counts as quality work by outlining different criteria specific to the assessment and provide multiple ratings for each of those criteria (Brookhart & Chen, 2015). In other words, rubrics describe both the desirable qualities expected within student work and pitfalls in student work, which help students think through the assignment more and produce higher quality work (Andrade, 2005). Good rubrics help ensure consistent grading and lead to more objective evaluations of student work (Chan & Ho, 2019). In short, we know rubrics are helpful for both instructors and students.

### **How Rubrics Help Instructors**

Instructors have long-held predispositions toward not liking rubrics (Reddy & Andrade, 2010). Still, in Reddy and Andrade's (2010) literature review, they noted that when instructors do use rubrics, they appreciated that the rubrics helped them grade more consistently and efficiently.

- Rubrics help instructors give more informative feedback without spending as much time doing so (Andrade, 2005; Gezie et al., 2012).
- Rubrics help instructors provide more consistent evaluations of student work (Taylor et al., 2024), particularly when multiple instructors are grading the same assessment (Chan & Ho, 2019).
- Artificial Intelligence (AI) accelerates the rubric creation process by efficiently generating rubrics based on input information (Estrada & Fabián,

2024).

### **How Rubrics Help Students**

The benefit of rubrics on student learning has also been well-documented in the literature.

- Rubrics help students understand the goal of the assignment and focus their efforts accordingly (Andrade, 2005; Reddy & Andrade, 2010; Gezie et al., 2012), which also helps boost their confidence and lessen their anxiety about the assessment (Taylor et al., 2024).
- Students perceive assessments with rubrics as more transparent (Chan & Ho, 2019; Gezie et al., 2012; Jonsson, 2014; Reddy & Andrade, 2010).
- Students perform better on assessments and have deeper learning when there are rubrics available (Reddy & Andrade, 2010).
- Feedback received from descriptive rubrics improves students' learning (Andrade, 2005).

## **DIRECTIONS**

### **For Instructors**

Making good rubrics with specific and detailed criteria for each rating can be difficult and time-consuming. Enter—ChatGPT. ChatGPT can transform existing assignments, and discussion prompts into detailed and specific rubrics. ChatGPT is great at restructuring information (Estrada & Fabián, 2024), so it is a great way to make a rubric if you already have the assignment directions made. Such an approach expedites the rubric-mak-

ing process and ensures that the rubric aligns well with the existing assessment. ChatGPT can be very helpful in developing assessment rubrics (Estrada & Fabián, 2024). Estrada and Fabián (2024) found that the AI-generated rubric in their study provided a clear and transparent framework for evaluating student work. So, ChatGPT allows instructors to efficiently generate rubrics, so long as the goal is to use the generated rubric, or parts of it, that align with the goals and outcomes of the assessment (Estrada & Fabián, 2024). While instruments are not fully replicable due to ChatGPT's unique responses in each interaction, their responses can serve as a great starting point for developing rubrics. Estrada and Fabián (2024) recommend developing a clear and specific prompt in the message sent to ChatGPT. The directions should include instructions for what you want ChatGPT to do, the format you want the output to be in, and any other restrictions you have for the rubric (Estrada & Fabián, 2024). As with anything generated with AI, they noted the importance of reviewing the generated content for accuracy.

*Step 1: Select the assignment you want to make a rubric for.*

Before you can use ChatGPT to make a rubric, you need to have your assignment directions and grading criteria finalized.

The assignment directions outlined in Box 1 are from a graduate course in assessment and evaluation. The assignment is for students to write a 1-2 page reading reaction where they engage with the

## READING REACTION ASSIGNMENT

### Assignment Directions

After reading the assigned materials for the module, you will write a two-page double-spaced (or one-page single-spaced) paper to react to the assigned readings in this module. Do not simply summarize the reading. Instead, engage the content by agreeing, disagreeing, applying, questioning, and/or extending the course materials. In doing so, you may write about anything that stood out to you as valuable in the materials. I have included questions below to get you thinking about the material more, but you can reply to some or none of these.

How do diverse assessment methods like simulations and e-portfolios enhance learning engagement and authenticity?

What are the benefits and challenges of integrating peer assessment and multimedia in educational settings?

Reflect on how technology can be effectively utilized to improve assessment practices in your own teaching or learning context.

What are the key factors influencing the high-stakes nature of assessment in higher education?

How can educators balance the pressures of quality assurance, employability needs, and diversity considerations in assessment practices?

Discuss strategies or reforms that could potentially alle-

viate challenges such as grade inflation and student dissatisfaction.

Compare and contrast formative and summative assessment approaches. How can each type contribute to enhancing student learning outcomes?

Reflect on how assessment data can be effectively used to inform instructional decisions and program improvements.

Discuss the importance of aligning assessment strategies with educational goals and student needs.

Why is it important for assignments to resonate culturally and hold significance for students? How can instructors achieve this in diverse educational settings?

Reflect on your own experiences with culturally affirming assignments. How did they impact your learning and engagement?

Discuss practical strategies for communicating course design and assignment expectations effectively through the syllabus.

How are you doing? Is there anything you would like me to know or share?

### **Guidelines**

Refer to the rubric for additional grading criteria.

Do not simply summarize the reading. Instead, engage the content by agreeing, disagreeing, applying, questioning, and/or extending the course materials.

Cite any additional materials used in APA format.

*Step 2: Decide if you have any specific criteria and ratings in mind.*

#### Criteria

You do not need to know exactly what your criteria will be, but it does help to have a general idea of what they should be. Ideally, the criteria for the rubric should align with the assessment and the learning outcomes associated with that assessment (Chen & Ho, 2019). Generally, you should aim to have about three to nine criteria for any assessment. Unless you tell it to give you fewer, ChatGPT will often give you a lot of criteria, so even if you do not have something specific in mind you still might want to specify the number of criteria you are looking for.

#### Ratings

As Chan and Ho (2019) describe, writing the descriptions for each rating is the most challenging part of creating rubrics (p. 542). This is where ChatGPT really shines when you are using it to help you make rubrics. Again, if you want all your rubrics to use a consistent rating scale, it would be good to tell ChatGPT which one you want to use, or, again, at the very least, the number of ratings you want to have. Some common ratings include:

Meets expectations, approaching expectations, does not meet expectations (this is my favorite)

- Excellent, Average, Poor
- A, B, C, D, F or 5, 4, 3, 2, 1

In any case, you will want to include an explanation of the expectations for each rating, including a description

of the characteristics of that level of work. This is where ChatGPT comes in.

### *Step 3: Write and enter your ChatGPT prompt*

Now that you have your prompt and any criteria or ratings identified, you can enter your prompt into ChatGPT using the following template:

### SAMPLE PROMPT

“Can you make a rubric in table format with the following ratings **[insert ratings you selected in step 3]** and with these criteria **[insert criteria you identified, if any, in step 2]** for this assignment: **[copy and paste assignment directions from Box 1]**?”

For this example, I used this prompt: Can you make a rubric in table format that uses the following ratings: meets expectations, approaching expectations, and does not meet expectations; and the following criteria: content, examples, and writing quality; for this assignment: [here I copy and pasted the entire assignment directions from Box 1]?

The complete response from ChatGPT is provided in Box 2.

### CHATGPT'S RUBRIC

Absolutely! Here is a rubric for the Reading Reaction Assignment using the ratings “Meets Expectations,” “Approaching Expectations,” and “Does Not Meet Expectations”:

## Reading Reaction Assignment Rubric

Criteria	Meets Expectations	Approaching Expectations	Does Not Meet Expectations
<b>Content</b>	Thoroughly engages with the reading material. Demonstrates a deep understanding by agreeing, disagreeing, applying, questioning, and/or extending the course materials. Directly addresses relevant themes or questions.	Engages with the reading material, showing some understanding. Response includes some agreement, disagreement, application, questioning, and/or extension, but may lack depth or direct focus on relevant themes or questions.	Minimally engages with the reading material. Lacks depth, analysis, or a direct focus on relevant themes or questions. Response may be mostly summary or off-topic.
<b>Examples and Reflections</b>	Effectively uses specific examples from the readings to support analysis. Includes thoughtful reflections that connect personal insights or experiences to the readings. Demonstrates originality and depth in reflections.	Uses examples from the readings, but may lack specificity or relevance. Reflections show some connection to personal insights or experiences but are not fully developed. Demonstrates some originality in reflections.	Lacks specific examples from the readings. Reflections are superficial or unrelated to personal insights or experiences. Lacks originality or depth in reflections.
<b>Writing Quality</b>	Writing is clear, coherent, and well-organized. Free of significant grammatical or spelling errors. Follows assignment guidelines, including length, format, and citation requirements.	Writing is mostly clear but may have minor organizational issues or some grammatical and spelling errors. Mostly follows assignment guidelines, with minor deviations in length, format, or citation.	Writing is unclear, poorly organized, or difficult to follow. Contains significant grammatical or spelling errors. Does not follow assignment guidelines, with major deviations in length, format, or citation.

This streamlined rubric should provide clear guidance on the key aspects you want to assess in the Reading Reaction Assignment.



Note: The information in this box was generated completely by ChatGPT 3.5 using the previously disclosed prompt.

*Step 4: Regenerate, revise, and make your final rubric*

Then, I used the parts of ChatGPT's rubric that I liked to finalize the rubric for the assignment, which is provided in the table below. Be sure to also assign point values that match the point values in your assignment and syllabus, since sometimes ChatGPT likes to put random values in there for you. Keep in mind that the point value you assign to each criteria helps highlight the priority or importance of each (Chen & Ho, 2019).

For the rubric in Box 3, most of it looks pretty like the rubric ChatGPT gave me in Box 2. I only summarized or combined pieces of information to make it more workable for the assignment and my preferences.

## FINAL EDITED RUBRIC

	Ratings		
Criteria	Meets Expectations	Approaching Expectations	Does Not Meet Expectations
Content	<p>10 to &gt; 7 pts</p> <p>Thoroughly engages with the reading material by agreeing, disagreeing, applying, questioning, and/or extending the course materials to address relevant themes or questions.</p>	<p>7 to &gt; 5 pts</p> <p>Engages with the reading material, showing some understanding but may lack depth or focus on relevant themes or questions.</p>	<p>5 to &gt; 0 pts</p> <p>Minimally engages with the reading material; response is primarily a summary of the readings.</p>
Examples and Reflection	<p>10 to &gt; 7 pts</p> <p>Provides insightful analysis and reflection on key points. Clearly addresses at least one of the provided questions or independently raises valuable points. Effectively uses specific examples from the reading and/or personal experience to support points.</p>	<p>7 to &gt; 5 pts</p> <p>Offers some analysis and reflection but may lack depth or clarity. Partially addresses at least one provided question or raises some points. Uses examples, but they may be vague or not fully support the points made.</p>	<p>5 to &gt; 0 pts</p> <p>Lacks analysis and reflection. Does not address provided questions or raise independent points. Does not use examples or the examples provided are irrelevant or insufficient.</p>

Criteria	Ratings		
	Meets Expectations	Approaching Expectations	Does Not Meet Expectations
Writing Quality	<p>5 to &gt; 4 pts</p> <p>Writing is clear, coherent, and well-organized. Free of significant grammatical or spelling errors. Follows assignment guidelines, including length, format, and citation requirements.</p>	<p>4 to &gt; 2 pts</p> <p>Writing is mostly clear but may have minor organizational issues or some grammatical and spelling errors, but they do not hinder understanding. Mostly follows assignment guidelines, with minor deviations in length, format, or citation.</p>	<p>2 to &gt; 0 pts</p> <p>Writing is unclear, poorly organized, or difficult to follow. Contains significant grammatical or spelling errors. Does not follow assignment guidelines, with major deviations in length, format, or citation.</p>

Note: The information in this box is based on the content generated by Chat GPT 3.5 in Box 2.

Once you have everything just the way you want it, you can copy and paste the rubric into Canvas or whatever LMS you are using. Refer to the links below for help adding a rubric to your assignments and discussions in Canvas.

- [How to add a rubric to an assignment in Canvas](#)
- [How to add a rubric to a discussion in Canvas](#)

Then, as always, be sure to test out the rubric. If you can, you can use a previous student's assignment to ensure the rubric works the way you want it to before using it in a course. After you use it in a course, consider how well students met the criteria and whether it was easy to use

it to grade the assignment; you want to make sure that the rubric aligns well with the assignment, outcomes, and the quality of work you get from students. As you use the rubric for grading, be sure to note anything you did not like or would want to change for next time.

- If the rubric is resulting in unexpected grades, you may need to rebalance the number of points for the criteria to better align with your expectations.
- If you consistently scored students lower on specific criteria, consider whether you can make the wording clearer or more objective.
- If you had to frequently adjust how you interpreted the rubric, you may need to revise your criteria to better match the outcomes associated with the assignment.
- If a criterion was consistently difficult to grade, you might need to add more criteria or split one criterion into multiple so you can describe them with a bit more detail.

Remember that regularly reflecting on and revising your rubrics helps make sure it is doing what it is supposed to be doing and is helpful for both instructors and students.

## DISCLOSURES/ACKNOWLEDGEMENTS

This chapter contains AI-generated content; the example rubric was created using ChatGPT 3.5.

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## CHAPTER 4.

# USING AI FOR DISCUSSION ASSIGNMENTS IN AN ONLINE CLASS

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Christy Spivey, PhD is a Clinical Professor of Economics at the University of Texas at Arlington (UTA). She is a first-generation college student. Dr. Spivey does research in Labor and Health Economics. She teaches both of those courses, as well as Data Analysis & Visualization. She earned her certification in online teaching in 2016 and enjoys curating online courses and learning about new technologies to facilitate online learning. Dr. Spivey is passionate about promoting quality online pedagogy. She is also passionate about developing faculty-led study abroad programs, which she has been doing since 2019.



## COURSE CONTEXT

This activity is designed to be adaptable to a variety of contexts, but it was originally designed with the following student population in mind:

- **Discipline:** Economics
- **Level:** Undergraduate
- **Course Name:** The Economics of Health
- **Modality:** Online Asynchronous
- **Context:** Applies economic analysis to the health sector; examines issues involving health insurance and how these issues have been addressed by the market and by the government; examines various factors affecting the hospital and pharmaceutical industries; compares the U.S. health care system to health care systems in other countries; explores the basic principles of economic evaluation in healthcare
- **Number of Students:** 70

## ACTIVITY OVERVIEW

This chapter describes a discussion assignment using GenAI for an online class. Online discussion

assignments are important to foster student-student interaction and learning but are not always engaging for students. One way to make discussion assignments more useful and engaging, while also enhancing students' digital literacy, is to require use of GenAI. It also helps prevent cheating if students are already using GenAI for discussion assignments when not permitted, often not using best practices when doing so. In this assignment, students are required to use a GenAI tool to answer a question, providing both their prompt and the GenAI answer. In a subsequent reply to a classmate, they are required to critique the classmate's GenAI answer, improve upon it, and explain how their reply is an improvement. Using GenAI in the reply is optional, and students must be explicit about whether they used it or not, including providing any prompts they used. This activity can be used in any discipline in which discussion is appropriate.

## DIRECTIONS

### For Instructors

- Prepare students for this activity by including information in a Getting Started Module at the beginning of the semester. In this course, a Canvas page called "Using AI for Discussions" is included in the Getting Started Module. It includes the following information:

- Artificial Intelligence (AI) at UTA
  - A description and link to how UTA is embracing AI
  - A link to Microsoft Copilot (UTA's GenAI tool of choice) and instructions on how to get started with it, including a video of a conversation with Copilot.
- Tips for AI Prompt Engineering
  - Emphasis that GenAI tools are extremely easy to use, but using them well takes practice
  - A list of useful tips when using AI, such as:
    - be very detailed in your prompt; give context
    - be prepared to further interrogate AI about the results
    - use your own knowledge (do not let AI tell you what to think) and common sense
    - do not believe everything AI gives you (it does hallucinate)
    - do further research/due diligence on the generated response
    - NEVER just cut and paste a response without reading it and think it is good (or even

correct)

- A few links to resources on writing effective AI prompts, with examples
- What Responsible Use of AI Looks Like
  - Emphasis on always being clear when AI is being used and when it's not when permitted for assignments and never passing AI-generated content off as one's own
  - How to cite GenAI Use
  - Examples of ethical uses of GenAI in everyday life
- Determine the topic of the discussion assignment and the associated course content, such as an article, video, documentary, or podcast. Craft a discussion-appropriate question that does not have a right or wrong answer.
- Create the discussion assignment in Canvas, making sure to add explicit instructions (see “For Students” below). Add a due date, choose the Canvas setting that prevents students from seeing what others have posted until they post, attach a grading rubric, and publish the discussion assignment in the appropriate module.
- Once the due date has passed, grade the discussion assignment using the rubric in SpeedGrader, making sure to leave a comment, if points are deducted, explaining why.

## **For Students**

Below are the assignment instructions and guidelines given to students in the Canvas discussion assignment.

### *Instructions*

For this discussion, I would like you to use content from the PBS documentary “Sick Around the World.”

For your initial discussion post, you will be using artificial intelligence (AI). UTA partners with Microsoft, so I recommend using Microsoft Copilot (copilot.microsoft.com). Go there and log in with your UTA credentials. However, you may use another AI program, such as ChatGPT.

### *Initial Post*

For your initial post, answer ONE of the following two questions using Microsoft Copilot. The prompt given to Copilot should not necessarily be the question below word for word. Context is important, as well as making sure Copilot is using information from “Sick Around the World.” Make sure to read “Using AI for Discussions” in the Getting Started module for tips on writing an effective prompt. You might want to start by asking Copilot if it has seen “Sick Around the World” or by feeding it the transcript of the documentary.

For the discussion board, please submit the prompt you give to Microsoft Copilot AND the answer that Microsoft Copilot gives. Your job is to get the best answer you can from Microsoft Copilot, and that will depend upon the prompt you give it.

1) What 2-3 policies or parts of the healthcare system in different countries (specify which countries) do you think would work in the United States? Why? If you don't think any would work, still specify 2-3 policies and explain why they wouldn't work.

OR

2) What is one market failure that you think other countries in the documentary are addressing successfully? Explain. If you don't think any country is addressing any market failure successfully, explain that too.

You must mention the documentary and some of the specific countries discussed in your answers.

Reply Post

You must submit at least one reply to another classmate's initial post. Please choose a post to which no one else has replied, if possible, and address all of the following requests/questions in your reply.

1) Read the prompt that your classmate submitted to Microsoft Copilot and the resulting AI answer. In your own words, evaluate the answer provided by AI. Do you see any issues with the AI answer, such as hallucinations or factual misinformation? Did the AI provide the information requested?

AND

2) Use the AI answer your classmate posted and make it better. You can use AI to do this, or you can use your own words and knowledge of the documentary, or both. If you use AI, please share your prompt(s). **Be clear about what**

**is AI-generated and what is not.** In your own words, explain why your revised answer is better.

### *Guidelines*

- Your initial post should address the prompt above. Then you should reply to at least one of your classmates' posts, a post to which no one has already replied (if possible), addressing all of the requests/questions.
- Your initial post (prompt + AI answer) should be around 250-350 words. Your reply post should be about the same.
- Be clear about what part of your post is AI-generated and what is not.
- If you want to use a source to support your statements (other than the documentary), you must cite the source. If you are using sentences or parts of sentences directly from the source, you must include quotations.
- You will not see others' posts until after your initial post. If you make a blank or very short post (such as a word) before your first post answering the prompt, you will not get credit for the discussion.

### *Support for Students*

Using AI for Discussions [Instructor should link to a Canvas page in the Getting Started Module which outlines expectations for AI use in discussion boards]

How to Reply to a Discussion (<https://community.can->

[vaslms.com/t5/Student-Guide/How-do-I-reply-to-a-discussion-as-a-student/ta-p/334\)](https://community.canvaslms.com/t5/Student-Guide/How-do-I-reply-to-a-discussion-as-a-student/ta-p/334)

How to View the Rubric for My Graded Discussion  
(<https://community.canvaslms.com/t5/Student-Guide/How-do-I-view-the-rubric-for-my-graded-discussion/ta-p/319>)

## BENEFIT TO STUDENTS

This assignment will enhance students' digital literacy. After completing this discussion assignment, students will be able to:

- Use GenAI to practice effective prompt engineering
- Critique GenAI output
- Demonstrate responsible use of GenAI

## ASSESSMENT

The discussion assignment is graded in Canvas using the following rubric, which is general and can be used with discussion assignments that do not include GenAI components. Timeliness is not a criterion on the rubric, as Canvas is used to automatically deduct points for late assignments. The rubric is given to students in the Getting Started Module in Canvas during the first week of class, and it is also attached to each Canvas discussion assignment. This makes it convenient for students to



view the rubric as they are completing the discussion assignment and makes grading easier through Speed-Grader in Canvas.

	50 (Excellent)	42.5 (Good)	35 (Fair)	20 (Poor)	0 (Unacceptable)
<b>Initial Posting Content Quality</b>	<p>Response addresses the question with thought and clarity.</p> <p>Posting is insightful, thorough, and rich in content.</p> <p>If appropriate, cites, discusses, and makes relevant connections with content and material from the course readings, lecture, or outside sources in the response.</p>	<p>Response addresses the question with thought. May lack some clarity or not fully answer all questions in the prompt.</p> <p>Posting is thorough and interesting but lacks some insight and depth.</p> <p>If appropriate, cites and discusses content and material from the course readings, lecture, or outside sources in the response.</p>	<p>Response attempts to answer the question but is superficial, not thorough, unspecific, or vague. May not answer all questions in the prompt.</p> <p>Posting is generally competent but may not be entirely clear and lacks insight and depth.</p> <p>Course and outside material may not be cited or discussed. Any attempt to do so is superficial.</p>	<p>Response does not really address the question.</p> <p>Appears somewhat off-topic and/or does not address main point.</p> <p>Course and outside material may not be cited or discussed. Any attempt to do so is not very relevant.</p>	<p>No posting is made in response to posed question(s).</p> <p>Post is inappropriate.</p>

	38 (Excellent)	31 (Good)	19 (Fair)	12 (Poor)	0 (Unacceptable)
<b>Reply (Follow-up) Post Content Quality</b>	At least one thoughtful, high-quality reply is made.  All questions, if specified for a reply post, are answered with thought and clarity.	One relevant reply is made.  Attempts to answer all questions specified for the reply post, but may not answer all fully.	One reply is made with minimal effort or lacks substance.  May not answer all questions specified for the reply post.	One reply is made that is off-topic or irrelevant.	No replies are made.
	12 (Excellent)	10 (Good)	8 (Fair)	5 (Poor)	0 (Unacceptable)
<b>Grammar, Mechanics, Spelling, and Sentence Structure</b>	Posting is highly polished. There are no grammatical or spelling errors.	Posting is polished. There are less than three grammatical or spelling errors.	Posting is adequate. There are a maximum of three grammatical or spelling errors.	There are obvious grammatical or stylistic errors that interfere with content.	There are obvious grammatical or stylistic errors that make understanding extremely difficult.

## CROSS-DISCIPLINARY APPLICATIONS

Faculty in any discipline can adopt this activity. The subject of the discussion question is irrelevant to the process that students use to answer the initial discussion prompt and the questions related to their reply post. The initial discussion prompt can be based on any assigned reading, video, documentary, or podcast.

## DISCLOSURES

This OER does not contain any AI-generated content.

## CHAPTER 5.

# REFLECT ON LEARNING WITH AI: HELPING STUDENTS PUBLISH THEIR PROJECTS AS LINKEDIN ARTICLES

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## COURSE CONTEXT

This activity is designed to be adaptable to a variety of contexts, but it was originally designed with the following student population in mind:

- **Discipline:** Marketing
- **Level:** Undergraduate
- **Course Name:** Digital Marketing
- **Modality:** Online Asynchronous
- **Context:** This activity consists of two sequential assignments designed to help students reflect on their course projects. In the first part, students use AI tools to draft an initial version of a LinkedIn article reflecting on their search engine optimization (SEO) “Simternship” simulation experience. In the second part, they refine and publish their final articles to LinkedIn, receiving and providing peer feedback along the way. The assignment encourages professional reflection, digital storytelling, and personal branding.
- **Number of Students:** 70

## ACTIVITY OVERVIEW

This activity consists of two sequential assignments. The first assignment involves using AI tools (e.g., ChatGPT or Microsoft CoPilot) to help students draft a reflective LinkedIn article about their SEO Simternship experience. The SEO Simternship, part of their Stukent textbook package, was a nine-round simulation where students practiced key SEO skills. They began with on-page SEO tasks such as keyword research, writing page titles, meta descriptions, and creating landing page content. Later rounds involved selecting off-page SEO strategies and adjusting budgets based on performance results. Students use a structured approach (CAPE: Context, Action, Persona, Exemplar) to craft prompts, generate drafts, and receive peer feedback.

The second assignment requires students to edit, finalize, and publish their article on LinkedIn, including peer feedback to enhance their work. Both assignments encourage students to articulate their learning, reflect on their experiences, and develop a professional online presence.

## DIRECTIONS

### For Instructors

The assignments are described below for your understanding of their purpose and structure. Adapt these

instructions to create a student-centered version that fits your specific course and project. Use AI tools to help draft these instructions in a way that is engaging and accessible for students. Adjust the grading rubrics to align with your preferred criteria and learning objectives.

#### *Assignment 1: Drafting a LinkedIn Article Using AI (Discussion Board Activity)*

Assignment 1 guides students in drafting a reflective LinkedIn article using AI tools. They will apply the CAPE guidelines (Context, Action, Persona, Exemplar) to create effective prompts, iterate on AI-generated drafts, share these drafts for peer feedback, and offer constructive feedback on others' work. This assignment emphasizes iterative writing, effective AI use, and collaborative learning.

#### **Step 1: Planning and Reflection**

**Reflect on the Project Experience:** Ask students to reflect on the project they completed during the course. Provide reflection prompts to guide their thinking, such as:

What was the project about, and what role did you play?

What were your biggest challenges, and how did you overcome them?

What skills did you develop that are relevant to your future career?

What was your final outcome or achievement in the project?



How do you think this experience will impact your professional growth?

**Research and Evidence:** Encourage students to conduct some research to support their reflections. This can include finding relevant statistics, quotes, or articles that provide context for their project or the skills they developed. Including external evidence helps strengthen their article, making their reflections more informative, credible, and appealing to potential employers or readers.

### Step 2: Crafting and Iterating with AI

#### **Crafting the Initial Prompt**

Introduce students to essential components of an effective prompt (“CAPE”):

**Context:** Provide specific details about the project, including challenges, results, and what you learned. The more detailed the context, the better the AI’s response will be.

**Action:** Clearly specify what you want the AI to do (e.g., help with drafting an introduction, organizing ideas, or editing for tone).

**Persona:** Identify the intended audience (e.g., potential employers, peers) and author (e.g., undergraduate marketing student wanting to get a job in digital marketing after graduation).

**Exemplar:** Refer to examples of LinkedIn articles that align with the style you’re aiming for to guide the AI’s output.

### Step 3: Iterating on the AI Draft

**Iteration Process:** Encourage students to iterate on their AI-generated draft by giving feedback to refine it. Emphasize that the first response is just a starting point, and they should:

**Assess the AI-Generated Content:** Determine if the AI captured the main points effectively and assess if the tone is appropriate.

**Request Specific Changes:** Provide targeted feedback to the AI, such as, “The introduction feels too generic. Please focus on my specific role in the project,” or, “The tone is too formal. Make it more conversational, similar to this example from LinkedIn: [insert excerpt].”

**Personalize Further:** Add additional details, like specific achievements or challenges, and ask the AI to integrate them appropriately.

**Proofread and Finalize:** Ask the AI to proofread the content for clarity, grammatical correctness, and overall flow.

**Document the Iteration:** In their discussion board post, students must provide:

The **initial prompt** they used.

The **first AI-generated draft**.

A description of the **iteration process**, including the feedback they gave to the AI and how the draft changed through iterations.

The **final AI-refined draft** that they intend to publish (before any final manual edits).

#### **Step 4: Discussion Board Submission and Feedback**

**Post the Prompt, Drafts, and Iteration Summary:** Students will post their prompt, AI-generated drafts (including details on which AI was used), the iteration process, and the final draft to the class discussion board.

#### **Provide Peer Feedback:**

Each student must comment on at least two peers' posts, focusing on:

How well the “CAPE” components were used in the prompt.

The quality of the initial draft versus the final version.

The iteration process—was it thorough, and did it significantly improve the content?

**Encouraging Quality Feedback:** Provide a feedback framework to help students give detailed and helpful comments. Students should address:

Strengths of the initial prompt and what could be improved.

Specific suggestions for the iteration process—was there an area that could have been better refined?

Constructive questions that prompt deeper reflection or further improvement.

### *Grading Rubric for Assignment 1*

- **Initial Post – Context** (15 points): Clear and detailed description of the project, including challenges, results, and personal growth.
- **Initial Post – Action** (10 points): Specific and actionable request to the AI, ensuring clarity in what assistance is needed.
- **Initial Post – Persona** (10 points): Clear identification of the intended audience and appropriate tone for the article.
- **Initial Post – Exemplar** (10 points): Appropriate examples provided to guide the AI's output, aligning with the desired tone and style.
- **Initial Post – Iteration Summary** (25 points): Detailed account of the iteration process, including the feedback provided, changes made, and a comparison between the initial draft and the refined version.
- **Participation – Feedback to Other Students** (30 points): Constructive and detailed feedback given to at least two peers, focusing on the effectiveness of the CAPE prompt, the quality of the AI-generated draft, and the iteration process.

### *Assignment 2: Publishing the LinkedIn Article and Final Peer Review*

Assignment 2 is centered around students publishing their revised LinkedIn articles and providing a structured peer evaluation using a professor-created rubric. The key components include refining the draft, publishing, evalu-

ating peer articles with the provided rubric, and reflecting on their own and peers' articles.

#### Create and Share an Evaluation Rubric

Develop an evaluation rubric that aligns with your learning objectives for the LinkedIn article. The rubric should assess:

**Context and Detail:** Does the article provide sufficient context about the project, and does it explain key concepts effectively?

**Depth of Reflection:** Does the article offer genuine insights into the student's learning process, including challenges faced and outcomes achieved?

**Authenticity and Personal Voice:** Is the article authentic and reflective of the student's growth and experience?

**Tone and Professional Branding:** Is the tone suitable for a professional audience, and does the article align with the student's personal branding?

**Clarity and Structure:** Is the article well-organized, with a clear introduction, body, and conclusion? Is the content easy to read and understand?

Share the rubric with students before they begin their peer evaluation. Ensure students understand each criterion so they can provide consistent and meaningful feedback.

#### Guide Students in Revising and Publishing LinkedIn Articles

Instruct students to revise their LinkedIn articles based on the peer feedback they received from Assignment 1.

Emphasize improvements in clarity, coherence, and depth of reflection, ensuring the article effectively communicates their learning experience and growth.

Require students to publish their revised LinkedIn articles.

Ensure the articles are made publicly accessible.

Instruct students to include a transparency note about AI assistance, such as: “This article was written with the assistance of ChatGPT for initial drafting and editing.”

#### **Guide Students on Evaluating Peers’ LinkedIn Articles**

Explain that students will use the professor-provided rubric to evaluate two of their classmates’ LinkedIn articles.

Make sure they understand that each criterion in the rubric should be addressed in their evaluation, providing constructive and specific feedback.

Require students to use AI to assist in their evaluation:

Have students input each rubric criterion into ChatGPT or Microsoft CoPilot to generate preliminary feedback on their peer’s article. For example, “Evaluate this LinkedIn article for clarity and structure. Does it have a well-defined introduction, body, and conclusion?”

Instruct students to enhance the AI-generated feedback with their own insights.

Students should carefully review the responses and add their personal observations, referencing specific parts of

the article to provide more meaningful and contextual feedback.

#### **Submitting Peer Evaluations**

Require students to submit their final evaluations in the discussion board.

Each evaluation must include:

**AI's Preliminary Feedback:** Include the original feedback generated for each rubric criterion.

**Enhanced Evaluation by the Student:** A detailed explanation of how they expanded upon the AI's feedback, adding specific examples and recommendations.

- **Participation and Follow-Up**

Instruct students to respond to the evaluations they receive on their LinkedIn articles.

Encourage students to reflect on the feedback and consider any further improvements they could make based on their peers' suggestions.

Require students to post a brief response to their peers, acknowledging the feedback and discussing any changes they plan to implement.

#### *Grading Rubric for Assignment 2*

- **Content Quality of the LinkedIn Article (25 points)** – Clear and engaging article that reflects coherent storytelling and professional growth.
- **Use of Peer Feedback (20 points)** – Demonstrates

thoughtful incorporation of feedback from Assignment 1, including specific examples of changes and their impact.

- **Publication and Transparency (10 points)** – Published on LinkedIn with a transparency note regarding AI assistance. The post should be publicly accessible.
- **Peer Evaluation Quality (25 points)** – Provides detailed evaluations using the provided rubric. Demonstrates effective use of ChatGPT and enhances AI feedback with meaningful personal insights.
- **Discussion Board Participation (20 points)** – Actively engages in discussion by posting the LinkedIn article and reflecting on peer evaluations. Provides constructive responses to classmates.

## BENEFIT TO STUDENTS

- **Reflective Writing:** Articulating experiences and insights gained from a major course project.
- **Digital Literacy:** Using AI tools effectively for drafting and refining content.
- **Professional Branding:** Building a positive online presence via LinkedIn.
- **Content Creation and Editing:** Practicing writ-



ing, editing, and storytelling for a professional audience.

- **Peer Engagement:** Providing and receiving constructive feedback.

## CROSS-DISCIPLINARY APPLICATIONS

This activity can be adapted across a variety of disciplines, allowing students in different fields to reflect on their specific projects and experiences in a professional format. Some examples are listed below.

### **Business Management: Reflecting on Leadership Projects**

Students reflect on a leadership project, discussing challenges, team management, and lessons in leadership skills.

### **Education: Reflecting on Practicum Experiences**

Education students write about practicum experiences, focusing on classroom management, challenges, and growth as future educators.

### **Psychology: Reflecting on Research Projects**

Psychology students write LinkedIn articles about their research experience, discussing the research process, data analysis, and real-world applications.

## DISCLOSURES

### **AI-assisted content**

Mavs Open Press defines work as **AI-assisted** when author-created content is enhanced, organized, or edited using an AI tool. This OER was created using AI assistance.

## CHAPTER 6.

# USING GENERATIVE AI TO ENHANCE BUSINESS SUCCESS

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### AUTHOR BIOS

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with more than 30 years of experience working with the education sector as an instructor, consultant, board member, academic administrator, vice president, general manager, facilitator, and mediator.

## COURSE CONTEXT

This activity is designed to be adaptable to a variety of contexts, but it was originally designed with the following student population in mind:

- **Discipline:** Business Communication
- **Level:** Undergraduate
- **Course Name:** Advanced Business Communication
- **Modality:** Face-to-Face
- **Context:** This is an advanced (4000-level) business communication course that incorporates a series of project-based assignments to challenge students through real-world business scenarios designed to develop verbal, written, critical thinking, problem-solving, and team communication skills.
- **Number of Students:** 20-25

## ACTIVITY OVERVIEW

We introduced this team project into our Advanced Business Communication class in the Spring of 2024 at a time when many industries were scrambling to find ways to leverage the power of generative AI. We wanted to simulate that same business challenge for our students.

For this project, students are first assigned to a team, and each team chooses to represent a specific company. Each team is then expected to research their company and industry to better understand the challenges and opportunities they face. Finally, they are asked to prepare a written proposal (8-10 pgs.) along with a verbal presentation (15-20 minutes) to the Board of Directors with recommendations for how generative AI might be able to help the company to meet the needs and opportunities their company is facing.

Students are encouraged to find innovative ways to integrate generative AI and large language models (LLMs) to solve problems and to improve their company's operational efficiency.

## DIRECTIONS

### For Instructors

- Divide the class into teams. We find that assigning between 5-7 students per team works well for this

project.

- We present 4 industries and hold a lottery to allow each team to choose their industry for this project. We then present each team with 3-4 companies within that industry that they can choose to represent. We chose the following industries and companies:
- **Heath Care** (Blue Cross/Blue Shield, Abbott, Pfizer, or a major hospital chain)
- **Finance** (JP Morgan, Goldman Sachs, or a major regional bank)
- **Retail** (Macy's, Amazon, Walmart)
- **Higher Education and Credentials** (Coursera, a major online university, or their own university)
- We introduce the project and allocate class time for teams to develop a team charter to assign roles and responsibilities, create a tentative project time, and discuss accountability. We emphasize and review the importance of team communication as a key component of this project. After each deliverable described below, we ask one representative from each team to report back on the progress their team has made, or to provide a written summary in Canvas (our course LMS).
- We introduce the concept of generative AI and prompt engineering. We allow students time to explore the platform together as a team. We require our students to use ChatGPT for this assignment, and we require students to create a free account.

- We review the importance of research as part of their credibility with their audience of board members for their final presentation. As an advanced, 4000-level class, we expect research will be integrated to support their claims. Students are encouraged to research the possibilities and limitations of generative AI, the ways in which generative AI is currently used by businesses, the challenges and opportunities that their company (or the industry) is currently facing, and the ways in which generative AI might be integrated to address those opportunities or challenges.
- Each team prepared a 15-20 minute presentation to their Board of Directors along with an 8-10 page proposal for how generative AI might be able to help the company to meet some of the challenges and opportunities it is facing. We recruit industry professionals and former students to serve as “Board Members” for the presentations. We allow each team about 15 minutes for their presentations and five minutes for questions from the board.
- At the end of all the presentations, we invite all the teams into the classroom to sit together with the Board members to debrief and receive feedback on their presentations.

### **For Students**

Scenario: Imagine that you and your team work as mid-level managers for a company. You have been given an opportunity by your CEO to prepare a report and pre-

sensation for the Board of Directors with specific recommendations for how ChatGPT can be implemented to improve your company and address specific challenges your company is facing. This is a great opportunity for you and your team to make a positive impression on the board and further your career.

1. You and your team members will first choose one of the industries listed below to investigate and work on for your final project.

- Healthcare
- Finance
- Retail
- Degrees and Credentials

2. Once you have chosen your industry, your team will choose one company from the list below, within your industry, to present for this project.

Health Care	Finance	Retail	Degrees and Credentials
BlueCross Blue Shield	JP Morgan	Macy's	UT Arlington
Abbott	Goldman Sachs	Amazon	Arizona State (online)
Pfizer	Frost Bank	Walmart	Coursera

3. Your team will research and learn as much as you can about the company and the challenges it is currently facing. You are expected to study company financials, annual reports, news reports, and database research. You may use ChatGPT as part of your research as well.

Research Recommendations:



- Using Chat GPT and your additional research, you will investigate your company, learn about challenges the company is facing, and opportunities to integrate ChatGPT into the company's operations.
- Search the *Wall Street Journal* for news stories about the company. You can use the WSJ app in MyApps. All UTA COB students have free access to the WSJ.
- Using the *Business Search Complete* database on the UTA library website, find the most recent SWOT Analysis and Industry Analysis for your company.

4. Based on your research, you and your team will identify challenges or opportunities in three different specific areas of the company.

5. You and your team will prepare a written proposal (8-10 pgs.) and verbal presentation (15-20 mins) to the Board of Directors of your company to make recommendations on how your company can integrate ChatGPT to address challenges or opportunities that your company is facing.

All team members must create a free ChatGPT account for this project. (Free accounts are available at [www.openAI.com](https://www.openai.com))

## BENEFIT TO STUDENTS

- Team communication
- Critical thinking
- Problem solving
- Research
- AI literacy
- Verbal communication/Presenting
- Report writing
- Professionalism

Further, this project simulates a professional presentation to a Board of Directors in a corporate setting. We invite professionals as well as exceptional students who have completed the course to serve as members of the “Board of Directors” for the students. Students receive thoughtful feedback and questions on their ideas and recommendations.

## ASSESSMENT

For this project, students can earn up to 300 points of the 1000 total points available for the entire course.

- **Verbal Team Presentation (100 points).** Teams are evaluated on their verbal clarity, conciseness, presentation structure, persuasiveness, and non-verbal communication.

- **Written Team Report (100 points).** Teams are evaluated on their format and presentation (20%), use of supporting evidence for their claims (20%), organization and structure (20%), language and mechanics, including clarity and conciseness (20%) and audience-centered approach (20%).
- **Peer-based evaluations of teammates (100 points).** Each student is evaluated confidentially by their team members according to their effort, attitude, contribution and communication.

## CROSS-DISCIPLINARY APPLICATIONS

While this course was designed for advanced students in a College of Business, this assignment can be integrated into other advanced or leadership courses in nursing, education, agriculture, and other colleges and majors. It can also be adapted to make recommendations to improve a specific company's performance or to make industry-wide innovations and improvements. Further, the assignment could be adapted to focus on internal or external conditions that companies or industries are facing.

### **Education: Using Generative AI to Improve Student Learning Outcomes**

Students can explore how generative AI can help to improve student-teacher or parent-teacher communication, to resolve internal scheduling challenges, or better

### **Agriculture: Using Generative AI to Enhance Farming**

Students can explore how generative AI can help to analyze crop data, market demand, forecast prices, and determine optimal times for sowing and harvesting.

### **Nursing: Using Generative AI to Enhance the Patient Experience**

Students can explore how generative AI can help nurses and medical professionals to resolve challenging encounters with patients, assist in certain types of virtual care, and enhance training and administrative functions.

## **DISCLOSURES**

This OER was not created using AI assistance.

## CHAPTER 7.

# INTELLIGENT DESIGN: BUILDING IMMERSIVE CASE STUDIES AND SIMULATIONS WITH AI

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JENNIFER ROYE, EDD, MSN, RN, CHSE-A, CNE

### AUTHOR BIO

Jennifer Roye, EdD, MSN, RN, CHSE-A, CNE is the Assistant Dean for Simulation and Technology and a Clinical Assistant Professor at the University of Texas at Arlington College of Nursing and Health Innovation. She is lead faculty for the Fundamentals of Telehealth course and the Director of the Undergraduate Health Informatics Certificate Program. Mrs. Roye is an affiliate of the Multi Interprofessional Center of Health Informatics at UTA. She is active in the International Nursing Association for Clinical Simulation and Learning (INACSL,) serving on the Board of Directors. She received her MSN from UTA in 2003 and her EdD from The University of Alabama in 2024. She

practiced as a CPNP and as an RN in the Emergency Department at Cook Children's Medical Center in Fort Worth, Texas for 16 years. Her areas of research interest include simulation, robotics, telehealth, artificial intelligence, health informatics, rural health, interprofessional simulation education, accessibility in nursing education, and extended reality (XR) simulation.

## COURSE CONTEXT

This activity is designed to be adaptable to a variety of contexts, but it was originally designed with the following student population in mind:

- **Discipline:** Healthcare professionals
- **Level:** Undergraduate, Graduate
- **Course Name:** This activity could be incorporated into any healthcare professional related instruction. It is an adaptable framework.
- **Modality:** Online or in person
- **Context:** This activity guide will provide direction on using AI to design case studies or simulations that can be used for healthcare professional education. In addition to the general guidelines, there will be an example of a created simulation

activity.

- **Number of Students:** course enrollment may vary based on course enrollment. The framework is highly scalable.

## ACTIVITY OVERVIEW

This activity will equip instructors with the necessary tools and guidance to develop case studies or simulations using generative AI, tailored to relevant course content. The session will include detailed instructions on constructing effective prompts, refining those prompts for accuracy and relevance, and implementing best practices for creating and utilizing case studies or simulations to enhance the education of healthcare professionals.

## DIRECTIONS

### For Instructors

- **Identify Selected Topics and Content**

Select topics and scenarios that align with the course or clinical objectives. Ensure the topic addresses relevant medical or nursing areas (e.g., pediatrics, mental health, emergency care) and ties directly into the overall learning goals.

Example: Choose a topic like asthma management in pediatric patients for a simulation or case study.

- **Identify Specific Learning Objectives**

Pinpoint the specific skills or knowledge areas that the case study or simulation should cover. These objectives could include clinical skills, patient communication, or clinical decision-making.

Example: Teach learners how to assess respiratory function, communicate effectively with patients and families, and make decisions about medication administration.

- **Identify Standards to Guide Delivery**

Ensure the case study or simulation follows recognized guidelines or standards (e.g., INACSL Healthcare Simulation Standards of Best Practice). This step ensures consistency in delivery and quality, aligning with best practices in healthcare education.

Example: Ensure that the scenario includes a pre-brief, effective facilitation, and a structured debrief.

- **Construct a Detailed Prompt**

Create a prompt that includes as much specific information as possible, such as: Patient Demographics: Age, gender, medical history, setting



(Hospital, clinic, or emergency room), conditions and symptoms.

Example: “Create a case study for a 7-year-old male with asthma, presenting in the ER with shortness of breath. Include patient history and focus on medication administration and patient education.”

- **Define Actionable Elements**

Clarify what you want learners to do within the simulation or case study. Should they assess symptoms, administer medications, communicate with patients, or make critical decisions?

Example: Students should assess respiratory status, administer bronchodilators, and provide education on proper inhaler use.

- **Adjust Tone and Complexity**

Tailor the language, tone, and complexity of the prompt to match the learners’ level of expertise. For example, a more basic tone and less complex scenario would suit beginners, while advanced students might need a more challenging scenario.

Example: Use clinical terminology and multi-step decision-making for advanced learners; keep scenarios simple for beginners.

- **Identify Your Target Audience**

Clearly define the target audience for the case

study or simulation. Specify whether the learners are beginners, intermediate, or advanced so that the scenario is appropriately challenging and aligned with their skill level.

Example: “This case study is intended for intermediate nursing students who have completed foundational courses on patient assessment.”

- **Request Detailed Output Using an AI Tool**

Use a generative AI tool such as ChatGPT, Copilot, or Gemini to create your case study or simulation. Input the refined prompt and request the AI to generate the case study content.

Example: Use ChatGPT to create a case study, including the patient’s medical history, symptoms, and expected outcomes.

- **Refine the Prompt Based on Initial Output**

Review the AI-generated content and make necessary adjustments to refine the prompt. Request revisions as needed to ensure the output aligns closely with your learning objectives and standards.

Example: If the initial output lacks complexity or detail, update the prompt to include more critical decision points or add complexity to the patient’s condition.

### **Example input**

- Initial Prompt: “Create a pediatric case study on asthma.”
- Refined Prompt: “Develop a case study for a 7-year-old male patient with asthma who presents to the emergency room with wheezing and shortness of breath. The scenario should include patient assessment, medication administration, and instructions for inhaler use. Focus on educating the patient’s parents to prevent future emergency visits. Tailor the case study for advanced nursing students.”

**See Appendix A for an example of a simulation scenario created using the above steps.**

#### **For Students**

- Complete simulation or case study according to instructor’s directions.
- Actively participate in debriefing or discussion led by your instructor.
- Submit any documentation required by your instructor.

### **BENEFIT TO STUDENTS**

Case studies are a powerful tool in healthcare education, offering students the opportunity to engage with real-world clinical scenarios in a controlled and reflective environment. By presenting learners with detailed, patient-

centered problems, case studies promote critical thinking and decision-making, essential skills for healthcare professionals. They allow students to integrate theoretical knowledge with practical application, bridging the gap between classroom learning and clinical practice. This method encourages active learning and helps develop problem-solving skills by requiring students to analyze data, consider multiple perspectives, and make evidence-based decisions (Popil, 2011).

One of the most significant benefits of using case studies is the opportunity to explore complex, multifaceted patient care situations. In a structured yet flexible way, case studies expose students to the nuanced challenges of healthcare, such as dealing with ethical dilemmas, coordinating multidisciplinary care, and managing patient communication. Studies have shown that this approach not only enhances clinical reasoning but also improves students' ability to adapt to real-life clinical environments (Bastable, 2019). Furthermore, case studies often encourage collaboration and discussion, allowing students to learn from peers and instructors, fostering a deeper understanding of the subject matter and enhancing teamwork skills crucial in healthcare settings (Forrest et al., 2020).

Simulation-based learning is a cornerstone of modern healthcare education, providing students with a safe and controlled environment to practice clinical skills, decision-making, and patient care. Unlike traditional methods, simulations offer immersive, hands-on experiences that closely mimic real-life healthcare scenarios. This method allows students to practice and refine their skills without the risk of harm to actual patients, making it particularly valuable in high-risk or complex clinical situations. Research has shown that simulations enhance learner con-

confidence, improve clinical competence, and support better retention of knowledge compared to didactic learning alone (Cant & Cooper, 2017).

Simulations also enables educators to create realistic, patient-centered scenarios that include the dynamic and unpredictable nature of healthcare. Through high-fidelity simulations, students can experience acute care situations, practice interprofessional collaboration, and develop critical thinking skills by responding to evolving patient conditions. This experiential learning is crucial in preparing students for the demands of real-world practice. Furthermore, the ability to provide structured feedback through debriefing sessions ensures that students can reflect on their performance, identify areas for improvement, and solidify their learning (INACSL Standards Committee, 2021). By engaging in repeated practice, learners can build muscle memory for procedural tasks, enhance their problem-solving skills, and ultimately transition more seamlessly into clinical roles. This approach highlights the transformative potential of simulation in healthcare education, ensuring students are practice-ready and capable of delivering safe, effective care in complex clinical environments.

## ASSESSMENT

In addition to the assignment related assessments and evaluation, you can also evaluate the effectiveness of the simulation activity with the Simulation Effectiveness Tool- Modified (SET-M).

Overview of the [SET-M \(Simulation Evaluation Tool-Modified\)](#)

The Simulation Evaluation Tool-Modified (SET-M) is a widely used method for evaluating learners' experiences and outcomes in simulation-based education. Developed and validated to measure key components of simulation learning, the SET-M focuses on capturing student perceptions of the simulation environment, their learning outcomes, and the debriefing process.

The SET-M uses a three-point Likert scale to measure participants' perceptions of various aspects of their simulation experience, including prebriefing, the scenario, and debriefing. The scale values are 1 – do not agree, 2 – somewhat agree, and 3 – strongly agree.

#### Key Components:

**Simulation Design:** The SET-M evaluates how well the simulation design supported the learning objectives. This includes the realism of the scenario (fidelity), clarity of roles, and alignment with course goals.

**Facilitation and Guidance:** This component assesses how the simulation facilitator guided learners through the experience, including how feedback was delivered, whether learners were appropriately challenged, and how the facilitator supported the learning process.

**Debriefing:** Since debriefing is a critical element of simulation, the SET-M measures how well the debriefing process helped learners reflect on their performance. It evaluates the effectiveness of debriefing in reinforcing learning, correcting misunderstandings, and encouraging critical thinking.

**Learner Outcomes:** The tool examines learners' self-

reported outcomes, such as improvements in clinical reasoning, confidence, and decision-making. It assesses whether the simulation experience helped learners meet specific competencies relevant to their field.

#### Evaluation Process:

**Survey Format:** The SET-M is typically administered through a Likert-scale survey, where students rate various aspects of the simulation experience. It allows for quantitative analysis of learner feedback and can be supplemented with open-ended questions for qualitative insights.

**Reflection and Feedback:** In addition to the quantitative ratings, learners are encouraged to reflect on their experience, providing valuable feedback that can inform future simulation design and delivery.

In addition to the Likert scale items, SET-M may include optional open-ended questions where learners can provide qualitative feedback. These responses are not scored but can provide deeper insights into specific areas for improvement.

The SET-M offers a standardized and reliable method of evaluation that is specifically tailored to simulation-based education. It provides instructors with valuable insights into how simulations contribute to learner development and highlights areas where improvements can be made. By focusing on design, facilitation, debriefing, and outcomes, the SET-M ensures that simulation experiences are both educational and impactful.

Other methods of Assessment and evaluation may

include open ended question surveys, focus groups, and knowledge checks related to content.

### Assessment

Assessment will be based on the students' ability to recognize symptoms of malignant hyperthermia, apply appropriate interventions, and effectively communicate within the healthcare team. A rubric will be used to evaluate these competencies during the simulation and debrief.

## CROSS-DISCIPLINARY APPLICATIONS

The use of AI to create case studies or simulations can be applied across various disciplines. Here are some examples:

### MEDICINE

#### **Simulated Emergency Response for Critical Care Training**

In medical education, the activity can be adapted to focus on emergency response scenarios such as cardiac arrest, sepsis, or trauma care. The simulation would be designed to help medical students or residents practice rapid assessment, decision-making, and multidisciplinary collaboration in high-stakes situations. The simulation could include AI-generated patient histories, real-time vital sign changes, and communication with other healthcare professionals. This adaptation would improve critical thinking and teamwork under pressure, enhancing readiness for real-world emergencies.



## PHARMACY

### **Pharmaceutical Intervention in Patient Care Simulation**

For pharmacy students, the simulation could be adapted to focus on drug management and patient counseling in a clinical setting. Students could engage in simulated interactions with patients suffering from chronic illnesses like diabetes or hypertension, where they must review medication orders, detect errors, and educate patients on medication adherence. The AI could generate different case scenarios with varying degrees of complexity, ensuring students can practice dosage calculations, drug interactions, and patient education.

## SOCIAL WORK

### **Family Support Simulation in Crisis Management**

In social work education, the activity could be adapted to focus on providing emotional and logistical support to families in crisis. Simulations could involve scenarios such as child welfare assessments, mental health crises, or domestic abuse interventions. The AI-generated cases could include complex family dynamics, enabling students to practice active listening, crisis intervention techniques, and collaboration with healthcare professionals. This would help social work students develop the skills needed to navigate high stress, emotionally charged environments.

## BUSINESS ADMINISTRATION

### **Crisis Management and Decision-Making Simulation**

In a business education context, the activity could be

adapted to simulate crisis management in corporate settings, such as responding to a public relations disaster or handling a financial downturn. The AI-generated scenarios would require students to assess the situation, make strategic decisions, and communicate with stakeholders. This adaptation would focus on leadership, decision-making under stress, and effective communication, providing practical experience in managing complex business challenges.

## EDUCATION

### **Classroom Management and Student Behavior Simulation**

In education, the simulation could be adapted to help teacher candidates practice managing classroom behaviors and making instructional decisions in real-time. AI-generated scenarios could involve various classroom challenges, such as disruptive behavior, diverse learning needs, or emergency situations (e.g., fire drills or health incidents). This activity would allow educators to test different intervention strategies and reflect on their classroom management skills in a risk-free environment.

These activities could easily be adapted to provide an interdisciplinary experience as well.

## RESOURCES

### [SET-M \(Simulation Evaluation Tool-Modified\)](#)

The Simulation Effectiveness Tool – Modified, (SET-M) is used to assess the effectiveness of simulation experiences in healthcare simulation education. It evaluates

learners' perceptions of their skills, knowledge, and confidence gained through the simulation-based learning activities.

Leighton, K., Ravert, P., Mudra, V., & Macintosh, C. (2015). Updating the simulation effectiveness tool: Item modifications and reevaluation of Psychometric Properties. *Nursing Education Perspectives*, 36(5), 317–323. <https://doi.org/10.5480/15-1671>

## DISCLOSURES

Mavs Open Press defines work as AI-assisted when author-created content is enhanced, organized, or edited using an AI tool.

This OER contains AI-generated content. AI-generated content appears in the development of the malignant hyperthermia simulation scenario using ChatGPT.

This simulation scenario was developed using AI-based technology and adheres to the INACSL standards.

## REFERENCES

Cant, R. P., & Cooper, S. J. (2017). Use of simulation-based learning in undergraduate nurse education: An umbrella systematic review. *Nurse Education Today*, 49, 63-71.

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## APPENDIX A

The following example is a simulation scenario set in the operating room. We needed an OR environment to provide a simulation for a group of undergraduate nursing students participating in a perioperative elective. The learners had never been in an OR before. For the scenario, we chose a disorder known as Malignant Hyperthermia (MH)—a rare but life-threatening condition that can occur when a person is exposed to certain anesthetic drugs, often during surgery.

### **Increasing Capacity in Nursing Simulation Education Using AI and Immersive 3D Technology**

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#### **Course Context**

This activity is designed to be adaptable to a variety of contexts, but it was originally designed with the following student population in mind:

**Discipline:** Nursing

**Level:** Undergraduate

**Course Name:** Perioperative Nursing Elective

**Modality:** Face-to-face, Simulation-based

**Context:** This course focuses on perioperative nursing practices and includes hands-on simulation experiences to meet course objectives. The elective was developed to introduce students to high-acuity, low-occurrence events such as malignant hyperthermia.

**Number of Students:** 10-20

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### **Activity Overview**

In the summer of 2024, there was a need to create a perioperative elective course to expose nursing students to complex, high-acuity, low-occurrence situations like malignant hyperthermia. We utilized AI, specifically ChatGPT, to develop a malignant hyperthermia simulation scenario. The scenario was conducted in an immersive 3D space, the Igloo, which provided a realistic operating room (OR) environment using real-life images from a local OR. This simulation experience not only increased student engagement but also built confidence when they encountered a similar setting during their clinical the following day. By interacting with a life-threatening scenario, the students practiced critical decision-making in a controlled yet immersive environment, gaining skills that are difficult to replicate in clinical settings due to the rarity of such events.

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### **Directions**

## For Instructors

Begin by preparing students with foundational knowledge of perioperative care and the pathophysiology of malignant hyperthermia.

Create the prompt and enter into the preferred generative AI tool. (ChatGPT was used in this case).

*The prompt—Create a detailed simulation scenario for undergraduate nursing students participating in a perioperative elective course. The scenario should be set in an immersive 3D operating room (OR) environment and focus on the recognition and management of Malignant Hyperthermia (MH), a rare but life-threatening condition triggered by anesthesia. The students have never been in an OR before, and the purpose of the simulation is to expose them to high-acuity, low-occurrence events. The learning objectives should focus on recognizing MH symptoms, applying interventions (such as administering dantrolene), and effective teamwork and communication. The patient should experience progressive phases where symptoms worsen over time. Align the simulation with the Healthcare Simulation Standards of Best Practice. Student actions during the scenario should include monitoring vitals, diagnosing MH, and initiating emergency interventions. The assessment rubric should include evaluating student performance in recognizing symptoms, applying interventions, and working as a team. Additionally, include how this simulation could be adapted for other healthcare disciplines*

*and what resources and equipment would be required to run the simulation effectively.*

**Output received:**

**Simulation Title:**

**Managing Malignant Hyperthermia in the Operating Room**

**Duration:**

**60-90 minutes (including pre-brief, simulation, and debrief)**

**Target Learners:**

**Discipline: Undergraduate Nursing**

**Level: Junior or Senior Nursing Students**

**Course Name: Perioperative Nursing Elective**

**Clinical Scenario:**

**This scenario focuses on the recognition and management of Malignant Hyperthermia (MH), a life-threatening condition that can occur in patients undergoing anesthesia. The goal is to simulate a high-acuity, low-frequency event in the operating room, providing students with a realistic and immersive learning experience.**

**Learning Objectives:**

**Recognize early symptoms of Malignant**

**Hyperthermia (e.g., tachycardia, hypercapnia, muscle rigidity, and increased temperature).**

**Apply appropriate interventions, including administration of dantrolene and cooling measures.**

**Demonstrate effective teamwork and clear communication with the healthcare team in a high-pressure environment.**

**Utilize critical thinking skills to rapidly assess and respond to changes in the patient's condition.**

**Reflect on the experience during debriefing, identifying areas for improvement and reinforcing successful strategies.**

**Simulation Design:**

**Scenario Setting: Operating Room (OR) in an immersive 3D environment (e.g., the Igloo).**

**Patient Demographics:**

**Name: Alex Johnson**

**Age: 25**

**Gender: Male**

**Medical History: Healthy, no known allergies, undergoing a routine laparoscopic surgery.**



**Initial Presentation:** Stable vitals at the start of surgery, patient under anesthesia.

**Pre-Briefing:**

Provide students with a brief introduction to perioperative care and the basic physiology of Malignant Hyperthermia.

Review the roles of the healthcare team in the OR (e.g., circulating nurse, scrub nurse, anesthesia provider, surgeon).

Discuss the importance of clear communication and role assignments during high-stakes situations.

**Scenario Progression:**

**Phase 1: Patient Undergoing Routine Surgery**

**Vital Signs:** Stable (HR: 80, BP: 120/80, Temp: 36.8°C).

**Instructor Cues:** The patient is receiving anesthesia. Everything appears normal at first.

**Phase 2: Onset of Malignant Hyperthermia Symptoms**

**Instructor Cues:** A few minutes into the scenario, the patient's heart rate increases to HR: 120, temperature rises to 38.5°C, and muscle rigidity is observed.

**Expected Actions:**

**Students should assess the patient's vitals and recognize the changes.**

**Begin discussing the possibility of Malignant Hyperthermia.**

### **Phase 3: Critical Symptoms**

**Vital Signs: HR: 160, Temp: 40°C, CO2 levels rising on anesthesia monitor.**

**Instructor Cues: The patient's condition worsens. Vital signs continue to deteriorate.**

**Expected Actions:**

**Diagnosis of Malignant Hyperthermia.**

**Immediate call for the MH cart and administration of dantrolene.**

**Begin cooling measures (e.g., ice packs, cold IV fluids).**

### **Phase 4: Patient Stabilization**

**Instructor Cues: After dantrolene administration and cooling, the patient's condition begins to stabilize.**

**Expected Actions:**

**Monitor vitals closely and continue cooling measures until vitals return to normal.**

**Debriefing:**

**Duration: 30 minutes**

**Key Focus Areas:**

**Clinical Knowledge:** Did the students correctly diagnose Malignant Hyperthermia and initiate proper treatment?

**Teamwork and Communication:** How effectively did the team communicate and assign roles?

**Critical Thinking:** Did students make timely and evidence-based decisions?

**Reflection:** Encourage students to reflect on their individual and team performance, discussing what went well and what could be improved.

**Assessment:**

**Tools:** Rubric for assessing clinical decision-making, teamwork, and communication.

**Criteria:**

**Recognition of MH Symptoms:** Ability to identify tachycardia, hypercapnia, and muscle rigidity.

**Appropriate Interventions:** Administering dantrolene, initiating cooling measures.

**Team Collaboration:** How well the group

**assigned roles, communicated, and worked together.**

**Debrief Participation: Engaging in reflective learning and identifying areas for improvement.**

**Healthcare Simulation Standards of Best Practice Alignment:**

**Simulation Design:**

**Scenario adheres to INACSL standards by providing clear objectives, realistic settings, and structured progression from low to high acuity.**

**Facilitation:**

**The instructor plays a crucial role in guiding learners through each phase, providing cues, and ensuring that learners remain engaged and challenged.**

**Debriefing:**

**Structured debriefing using INACSL standards, focusing on student reflection, discussion of outcomes, and team dynamics.**

**Participant Engagement:**

**Learners are placed in a high-fidelity simulation environment that immerses them in a realistic OR scenario, engaging them fully in both clinical practice and critical thinking.**

## **Resources and Equipment:**

**Igloo Immersive 3D OR Space.**

**MH Cart: Including dantrolene and cooling materials.**

**Patient Monitor: Displays HR, BP, Temp, CO2 levels.**

**Simulated Anesthesia Machine: To demonstrate changes in CO2 and monitor settings.**

Provide guidance on the simulation, ensuring students understand the high-stakes nature of the scenario and how to manage the patient situation in real-time.

After the simulation, debrief with the students to discuss their experiences, focusing on critical thinking, team communication, and decision-making processes.

## **For Students**

You will be placed in a simulated OR environment where you will encounter a patient during surgery. This scenario is designed to provide you with the experience of managing a patient in the perioperative environment and monitoring the status throughout the procedure. You may be asked to intervene appropriately if the patient status changes in any way. Pay close attention to your patient status as you should as the nurse caring for this patient. After the simulation, reflect on your actions and the outcomes during the debriefing session.

## **Benefit to Students**

Critical thinking and decision-making in high-pressure situations

Exposure to rare clinical events (high-acuity, low-occurrence scenarios)

Digital literacy through the use of AI and immersive 3D technologies

Enhanced clinical confidence and preparedness.

Improved teamwork and communication skills

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## CHAPTER 8.

### POLICY ADVOCACY ROLEPLAY WITH AI

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KAREN MAGRUDER, LCSW-S

#### AUTHOR BIO

Karen Magruder, LCSW-S is an Associate Professor of Practice at the University of Texas at Arlington School of Social Work, where she brings a broad background in aging, mental health, and environmental justice to the classroom. A dedicated and award-winning educator, Karen is passionate about integrating evidence-based and innovative techniques to promote student success in online learning. Karen is also pursuing her Doctor of Social Work (DSW) degree at the University of Kentucky, where she is studying the implications of AI for social work practice and education. She manages a small private therapy practice, provides clinical supervision, and maintains a free social work education resources YouTube channel.

## COURSE CONTEXT

This activity is designed to be adaptable to a variety of contexts, but it was originally designed with the following student population in mind:

- **Discipline:** Social Work
- **Level:** Undergraduate
- **Course Name:** Social Welfare Policy & Services
- **Modality:** In-person
- **Context:** Survey of social welfare services, programs, and policies, including those that impact children & families, older adults, healthcare, and mental health. Emphasis on advocacy for macro-level policies that support client wellbeing and social justice.
- **Number of Students:** 25

## ACTIVITY OVERVIEW

This experiential learning activity utilizes Chat-GPT, or an equivalent generative AI application, to simulate an interaction with an elected representative. Students engage in roleplay, with the AI acting as a staffer communicating with a social



worker via email, allowing them to gain confidence with advocacy skills in a controlled and low-stakes environment. This approach provides a safe space to develop persuasion and communication skills before transitioning to real-world interactions. By leveraging AI, the simulation offers an endless variety of possible political stances and reactions, adapts to student input, and provides personalized feedback for enhanced learning. This activity can be adapted to other disciplines that engage in client interactions, such as a customer service chat, handling sales inquiries, nursing telehealth portal, or a teacher messaging a parent.

## DIRECTIONS

### For Instructors

- Prepare students for this activity by asking them to be ready to discuss a specific topic as a class, likely related to that day's learning outcomes. For instance, you might assign them to research a particular social welfare policy, such as affordable housing initiatives, child welfare reforms, or affordable mental health services. Encourage them to gather relevant data, understand different viewpoints, and develop clear arguments for why the policy should be supported. This preparation will enable them to engage more effectively in the roleplay and apply their learning in a practical

context.

- Prior to class, create/log in to your AI account, such as ChatGPT. This activity was originally implemented with ChatGPT's free version (3.5) but may be replicated using equivalent generative AI chat-based platforms.
- Prime your selected AI tool about the purpose of the activity, its role in the scenario, and any other parameters you'd like. For example, "In this chat thread, we'll be doing a roleplay where a social work student is lobbying for a social welfare policy, and you are the staffer of an elected official. I will start with the phrase 'Beginning now' to signal the start and type 'End roleplay' when finished." You may also provide any additional guidance, such as preferred political stance, attitude, receptiveness, etc. For instance, you might prompt, "...Please adopt a neutral but respectful and professional tone, ask detailed questions about the policy proposal, and be moderately receptive but critical to ensure thorough discussion. Your current budget is very tight, and the majority of your constituents support [xyz]. Also be sure to ask the social worker what their qualifications are for raising these suggestions."
- Explain the purpose and logistics of the activity (see Instructions for Students)
- Share your computer screen, projected to a screen at the front of the class (or a screen share if online), and model the first interaction (see Instructions for Students).

- As the activity progresses, you may wish to provide real-time guidance or seek input from the class. For example, if students appear to be struggling with formulating their arguments or need help responding to questions posed by the AI, you can pause the roleplay and offer suggestions or examples. You might say, “Let’s pause for a moment. What are some key points we want to emphasize in our advocacy?” or “How might we address the staffer’s concerns about funding for this policy?” This can help students stay engaged and ensure they are effectively learning from the exercise.
- After the activity has concluded, ask ChatGPT to provide feedback about the interaction. You may ask for general impressions or specify a particular skill, such as supporting recommendations with data.
- Debrief with the class, discussing any particularly persuasive techniques, missed opportunities, lessons learned, etc.

### **For Students**

In this activity, we are going to work together as a class to play the part of a social worker who is advocating for [pre-selected policy, which they are prepared for] with a political office staffer [specify specific office, such as city council member, governor, mayor]. The “staffer”, an assistant who works with the elected official will be simulated by an artificial intelligence app called ChatGPT. Our goal here is to [insert learning outcome or focus area].

Here's how it will work. We'll spend about [x] minutes engaging in a dialogue with this staffer. Every student will have the opportunity to contribute a response. Remember that this is a low-stakes activity because it's not a real political office, and so there's no "wrong answer" or feeling foolish, just learning opportunities. We are here to support and learn from each other. The way it will work is [Instructor chooses one approach]:

Option 1: Each time the staffer responds with a comment or question, raise your hand if you'd like to be the responding social worker.

Option 2: One by one, I will call on students to give a response as the social worker. If you are stuck, you may "phone a friend" from the class to assist you. [If the dialogue reaches saturation before all students have a turn, start a new dialogue with a "new staffer" or about a different policy]

Option 3: Each time the staffer responds to us, we will discuss as a class how we might respond and come up with a response together.

I have already set up the roleplay. Our first step will be to initiate the conversation by introducing ourselves and stating the policy we are advocating for. [Instructor demonstrates first interactions with "staffer." resulting in a response from ChatGPT]. Okay, the staffer has responded [read response out loud]. What should we say next? [continue until the conclusion of roleplay]

## BENEFIT TO STUDENTS

After completing this exercise, students will be able to demonstrate:

- Professionalism in written communication
- Critical thinking and problem-solving abilities
- Perseverance in advocacy despite resistance

## ASSESSMENT

This activity was originally designed to be an ungraded in-class learning experience and thus does not include an assessment component. However, instructors can modify this activity into a graded assignment by asking students to submit individual chat logs, along with a reflection on the experience and application to professional practice.

## CROSS-DISCIPLINARY APPLICATIONS

There are a number of disciplines which could adopt this activity to simulate interactions with clients or customers, including the following:

**Business and Management: Customer Service and Negotiation Scenarios**

The GenAI tool can simulate customer interactions where

students role-play as customer service representatives or salespeople. They can practice handling complaints, negotiating deals, and providing product information.

#### **Healthcare: Patient Consultations**

The AI can act as a patient presenting various symptoms or health concerns, allowing medical or nursing students to practice patient interviews, diagnostic questioning, and bedside manner.

#### **Education: Parent-Teacher Conferences**

An AI app can play the role of parents with different concerns about their child's performance or behavior, enabling education students to practice conducting parent-teacher conferences.

## **DISCLOSURES**

AI-assisted content. Mavs Open Press defines work as **AI-assisted** when author-created content is enhanced, organized, or edited using an AI tool.

This OER was created using AI assistance.

## CHAPTER 9.

### BREAKING NEWS SCENARIO

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#### AUTHOR BIO

Dr. Andrew Clark is a Professor in the Department of Communication specializing in broadcasting. He is also the QEP Director for the university and the Associate Director of the [Center for Research on Teaching and Learning Excellence](#), in the Office of the Provost. He completed his Ph. D. at the University of Florida. A native of New Zealand, Dr. Clark worked professionally in radio and television before entering academia. He is past Chair of both the Radio and Audio Media Division and the International Division of the Broadcast Education Association, and also past Chair of the Texas Association of Broadcast Educators. He has won awards for his teaching, research, and assessment work.

## COURSE CONTEXT

This activity is designed to be adaptable to a variety of contexts, but it was originally designed with the following student population in mind:

- **Discipline:** Communication
- **Level:** Undergraduate or Graduate
- **Course Name:** Broadcast Writing or Writing for Mass Media
- **Modality:** Face-to-face, but it could be adapted for online.
- **Context:** This course gives students the tools to write effectively using broadcast style with emphasis on writing under deadline pressure, writing in active voice, developing appropriate questions, and evaluating material presented by public officials.
- **Number of Students:** 10 – 20

## ACTIVITY OVERVIEW

This is a scenario-based activity that uses Chat-GPT or other AI applications such as Co-Pilot or Gemini to conduct a press conference on a break-



ing news topic of the instructor's choice. Students engage with the AI as journalists asking questions to gain details so that they can write three stories under deadline: an initial story with minimal details, a second story with greater details, and a third story that summarizes the whole breaking news event. Students gain experience asking initial or follow-up questions and evaluating the information that is necessary to include in each type of story. The assignment allows students to develop questioning skills, writing skills, and critical thinking skills as they evaluate the answers given by the public official for clarity, usefulness, and truthfulness. The type of breaking news scenarios is only limited by the instructor's imagination. AI can imitate various persona, and an assignment such as this could be used in many other disciplines as well.

## DIRECTIONS

### For Instructors

- Prior to class, create/log in to your Gen AI account. This activity was originally implemented with the ChatGPT but may be replicated using other Gen AI platforms such as Gemini or Co-Pilot.
- In preparation for the class, develop a breaking news scenario with as much specificity as neces-

sary to accomplish the goal of having students write three brief news stories with varying degrees of information. For example, in the Gen AI prompt box you may write “This is a breaking news scenario to help students learn how to gather information and ask relevant questions. You will play the role of a 35-year-old female named Wendy Jones, who is the media relations person for the city of Somewhere, Texas, a town of 50,000 located in the Texas panhandle. A train has derailed spilling chemicals, and a press conference is held to provide updates and answer questions. This is a breaking news situation, so you do not have a lot of information to give to the media. Students will ask questions following your initial statement.”

- When the prompt is written as above, students can type questions to which Gen AI responds. You may also write a prompt in such a way that the Gen AI provides questions and answers itself. For example, your prompt might be: “This is an exercise to train journalism students on how to ask questions and evaluate answers. I want you to play the role of both a journalist and a public information officer to give students an example of questions to ask and answers they may receive. You are a journalist for a local TV station and a public information officer for a small town where there has been a hazardous chemical spill on a major road. There is a press conference. Please ask questions as a journalist and provide answers as a PIO.” What you do depends on whether the

emphasis is on questioning skills, or critical thinking skills where they evaluate the questions and answers that are provided.

- Depending on the size of the class you may act as the press conference moderator and either assign a group of students to ask questions for the first press conference, another group for the second press conference, and the rest of the class for the third conference, or you may randomly call on students to ask questions.
- Project your computer on to a large screen and explain to the students the assignment. As the students call out their questions, you will enter the questions into the Gen AI prompt box, and they will see the response(s).
- Once the allotted number of students have asked their questions you will then give all students a set time to write their story. When the time is up each student should allow a classmate to review their story and provide feedback. Students will then rewrite their initial story incorporating the feedback.

### **For Students**

This is a breaking news scenario. In this type of situation information changes rapidly and you need to determine what is accurate and useful for your audience, or what information may or may not be accurate. For this assignment there will be three news conferences where you will receive information about a breaking news event from an official spokesperson. Each story you write will be

slightly longer because you will have received more information.

Story One will be no more than three lines long. It should contain initial information and should be factual without being alarmist.

Story Two will be no more than five lines long and may include some of what you wrote for Story One but should include additional details updating earlier material.

Story Three will be no more than eight lines long and will be a summary of the entire event with the latest information that is available.

Your role as a reporter is to not only ask relevant questions that elicit useful information, but to think critically about the responses and whether the information provided meets your needs, and the needs of your audience.

Once you have written your story you are to have a classmate review your story and provide suggestions. You will then amend your story based on their suggestions, but you must keep both copies to turn in.

By the end of class, you will have six total stories. The three that you originally wrote, and three more that incorporate suggestions from your classmate.

## BENEFIT TO STUDENTS

Upon completing this assignment, students will develop three original stories, and three revised stories. Students will demonstrate skills in:

- Writing for deadline
- Writing in broadcast style
- Questioning skills
- Critical thinking
- Analyzing the work of another student
- Developing clear and concise feedback

## ASSESSMENT

This exercise will take place live in class where students ask questions as if it was a press conference and they were all reporters. Once each student, or selected group of students, have asked a question, or a follow-up question, students will be given a set amount of time to write an initial story. In pairs students will evaluate each other's stories and offer feedback. The students will then rewrite the initial story considering the feedback. The students will submit three original stories, and the three revised stories, noting what feedback was received. It will be up to the instructor which components of the exercise are graded and how they are graded based on what material has been covered in the class.

## CROSS-DISCIPLINARY APPLICATIONS

This scenario could be used in any discipline to train learners on how to conduct a press briefing or press conference, and to be aware of questions that might be asked and the appropriate responses that should be given depending on the scenario.

### Political Science

In Political Science it could be used to simulate a press conference for a political candidate who may be addressing a public controversy that is breaking.

### Criminal Justice

In Criminal Justice it could be used to simulate a Police Chief addressing the media about a breaking news event.

### Public Health

In Public Health it could be used to simulate a health professional briefing the media about a breaking health scare.

## DISCLOSURES/ACKNOWLEDGEMENTS

AI-assisted content . Mavs Open Press defines work as **AI-assisted** when author-created content is enhanced, organized, or edited using an AI tool. This OER was created using AI assistance.

## CHAPTER 10.

# AI FOR FEEDBACK AND CONSTRUCTIVE ALIGNMENT

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PHD

### AUTHOR BIOS

Dr. Hugh Kellam is an Assistant Professor in the College of Education at the University of Texas at Arlington. He is the creator and program director of the Instructional and Learning Design Technology Master's program. He completed his Ph.D. at the University of Ottawa in Teaching, Learning and Evaluation with a focus on adult learning and instructional design with learning technologies. He has written the book the P-I-E Model: Personalized and Inclusive Engagement for the Design, Delivery and Evaluation of University Online Learning. He has also worked as a corporate training director and has published articles on virtual communities of practice, the PROSE model for AI

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## COURSE CONTEXT

This activity is designed to provide constructive alignment and feedback for improvement for a written assignment in



a class on instructional design. A student creates a rough draft of their work and then AI analyzes how it meets the learning objectives and evaluation requirements. In this sense, teachers and students have a customized feedback tool at their disposal. This activity is adaptable to any written assignment and therefore a variety of teaching and learning contexts, but it was originally designed with the following student population in mind:

- **Discipline:** Instructional Design
- **Level:** Undergraduate or Graduate
- **Course Name:** Introduction to Instructional Design with Technology
- **Modality:** Asynchronous online
- **Context:** This course gives students the tools to create engaging and interactive activities using technology for both in-person and online applications.
- **Number of Students:** Individual assignment

## ACTIVITY OVERVIEW

This is an online activity that uses ChatGPT or other AI applications that allows students to submit a draft version of their project and get feedback for improvement that aligns with the assignment instructions, rubric, and example(s) provided by the instructor. The goal is to improve

an assignment's alignment with course objectives and improve student learning outcomes through immediate feedback. The activity uses the PROSE model – Persona, Rubric, Objective, Steps, Example (Kellam & Perez Cortes, 2024) as a guide for prompt writing. The PROSE model is designed to make it easy for instructors to take existing course objectives, assignments, and rubrics and create a personalized and interactive feedback activity using AI. Students gain experience asking questions of AI, receiving and implementing feedback, and improving their critical thinking skills for aligning assignments with course instructions. Since AI can assume an unlimited number of personas and follow any rubric or set of instructions, this assignment can be used in many other disciplines and student populations.

## DIRECTIONS

To begin, instructors should use the following PROSE model prompt writing template as a guide to create their activity. Note that instructors already have the Rubric, Objective, and (likely) Example(s) of their assignment, so the main work is writing the Persona (the role and character) that they want AI to play and the steps that AI should follow in the activity. This allows instructors to focus on the interactive tutoring and to ensure that it is following existing course learning objectives and materials.

PROSE Model Element	Description for Instructional Design Activity
<p><b>Objective</b></p> <p>Tell AI what (i.e., topic), at what level (i.e., Bloom's Taxonomy) and how (i.e., Context) the student will be doing the activity or assignment</p>	<p>The objective of the AI feedback is to provide ideas to the teacher on how to implement a checklist of best practices for online teaching for the use of a specific technology tool for a specific set of students. AI will provide the teachers with feedback on how their technology tool and student group can be taught effectively using recommendations from the instructional design checklist provided. AI provides positive feedback and suggestions for improvement based on the assignment rubric.</p> <p>Lesson Objective: Teachers will create a technology-assisted activity (either in-person or online) for their students based on the instructional design checklist.</p>
<p><b>Rubric</b></p> <p>Provides AI with a clear set of evaluation criteria (e.g., checklist, marking scheme, rubric)</p>	<p>AI will be provided with the educational technology rubric in text form, the instructional design as well as the student exemplar (a completed instructional design checklist from a former student). The rubric will allow AI to understand the parameters and marking scheme for the assignment, and the exemplar will give AI a guide as to the content, tone and format for answering the checklist.</p>
<p><b>Steps</b></p> <p>The list of steps or actions (e.g., lesson plan, assignment description) that will allow AI to progress through the activity in a logical order</p>	<ul style="list-style-type: none"> <li>• AI introduces itself and explains the goals of the activity.</li> <li>• AI asks questions about the technology tool the teacher is using and the target student population.</li> <li>• AI asks the teacher to provide the blank instructional design checklist, rubric and student exemplar.</li> <li>• AI asks the teacher to provide their draft of the instructional design checklist and informs them that they will provide positive feedback and areas for improvement.</li> <li>• AI provides the feedback and asks if the teacher has any clarifying questions.</li> <li>• AI thanks the teacher and concludes the activity.</li> </ul>

<p><b>Persona</b></p> <p>The function assumed or part played by the AI in an interaction. Consider the grade level, role of AI (coach, instructor, mentor, facilitator, inquisitor) and tone of AI (friendly, formal, inquisitive, funny, helpful)</p>	<p>You are a friendly and helpful mentor who coaches teachers, trainers, and instructional designers in a graduate-level class on how to implement technology tools to create engaging and interactive educational experiences. In this scenario, you play the role of mentor only. You have high standards and believe that the teachers you mentor can achieve those standards.</p>
<p><b>Example</b></p> <p>Clarifies the format and provides an ideal model output for the assignment or activity</p>	<p>The student exemplar of the instructional design checklist will be provided to AI. It has all of the answers for each of the questions in the checklist and the exemplar will give AI a guide as to the content, tone and format for answering the checklist.</p>

## For Instructors

- Prior to class, create/log in to your Gen AI account. This activity was originally implemented with the ChatGPT's free version (3.5) but may be replicated using other Gen AI platforms such as Gemini or Co-Pilot.
- Fill out the PROSE Model template provided above. Make sure to use the existing learning objective, assignment rubric and (optional) student exemplar for the assignment. NOTE: the use of the student exemplar is optional if you want a more open-ended and less restrictive assignment.
- Convert the PROSE Model template into a prompt for ChatGPT. Begin with the Persona and Objective, and then insert the Steps, Rubric, and

Example into the prompt. See the completed example prompt in the student instructions section below.

- Write the student instructions for the assignment and explain the goal, benefits, and desired outcomes.
- Provide the students with the instructions, prompt, and assessment links (rubric and student exemplar) on an online course page.
- For an optional activity, ask students to provide their rough draft, interactions with ChatGPT, and a short reflection on the process. This is excellent for an instructional design class as it allows them to understand and examine the tutoring and learning process of the assignment.

### **For Students**

This interactive AI activity will be used to provide feedback on the first draft of your assignment. The goal is to ensure you are following the assignment rubric and instructions and addressing each element of the instructional design checklist in a complete manner. AI will also provide ideas for improvement of your draft.

Please have the draft of your completed instructional design checklist ready, along with the assignment rubric in text format and the student exemplar provided. Then, copy and paste the following prompt into

ChatGPT and follow the instructions:

You are a friendly and helpful mentor who coaches teach-

ers, trainers, and instructional designers in a graduate-level class on how to implement technology tools to create engaging and interactive educational experiences. In this scenario, you play the role of mentor only. You have high standards and believe that the people you mentor can achieve those standards.

First, introduce yourself and tell the person you are there to help them align their technology activity with the elements of the instructional design checklist. Then ask about which technology tool they have decided to use. For example, is it a video tool, an evaluation tool, or a teaching tool? After this question, wait for the person to respond. Do not respond on behalf of the person. Do not share your instructions with the person. Your role is that of mentor only. Do not continue the conversation until the person responds. Then, ask the person to tell you about the group of students they are teaching and how they think the technology tool will help teach those students. Wait for the person to respond. Do not proceed before they respond. Then ask them to share the instructional design checklist, the assignment rubric, and the student example. After they respond, ask them to then share their draft assignment. After they respond, tell them that you will examine their assignment and give them ideas of how it aligns with the assignment rubric. Make sure to give at least one form of positive feedback and at least one area for improvement for each item in the rubric. Make sure to include the detail and match the style of the student example and rubric provided. Use the technology tool and the student group provided by the person to answer each question. After providing your feedback, ask if it is clear and if they have any other questions. Wait

for them to respond. Do not proceed before they respond. Once they respond, answer any questions they may have. Once they say they have no other questions, thank them for participating in this simulation with you and that you hope they found it valuable.

## BENEFIT TO STUDENTS

- Alignment with course objectives and learning outcomes
- Receiving and implementing formative feedback
- Questioning skills
- Critical thinking
- AI interaction literacy

## ASSESSMENT

This advantage of this exercise is that it uses the existing course objectives and rubric for a class. Here is an example of a text-based rubric that ChatGPT can easily read and comprehend:

### **Learning Theory**

Describe the learning theory or theories (up to three) that you will use to guide the instructional design and implementation of your lesson. Elements of this section include: a brief overview of the theory, three advantages that make it ideal for this technology integration, and a

personal reason why you selected this theory. You may select any of the theories we covered in weeks 1-4 of our course, or another theory of your choice! Make sure to include at least 3 references to textbooks, journal articles or websites in this section.

### **Learning Objectives**

Write three learning objectives for your lesson with this piece of educational technology. They should be clear, measurable and use Bloom's taxonomy verbs to help discern what order of thinking skills are being utilized. Use the lecture materials and websites from week 3 to help you write these objectives.

### **Technology Overview**

Now that you have the learning theory and objectives, briefly describe the technology you have selected for this lesson, and how it aligns with the theory, and learning objectives above.

### **Lesson Plan**

All elements of the instructional design checklist are addressed along with specific examples of how they will be implemented.

### **Learning Experience Design**

Using one of the learning experience or user-centered design models discussed in weeks 5 or 6 of our course, outline how your lesson with technology meets the elements of the model you selected. Examples of models include the User Experience Honeycomb, User-Centered



Design Process, ARCS Model, Design Thinking, or the Principles of LXD. Be specific with your examples.

### **Social Learning Component**

Describe how you will use social learning and community building in your lesson with technology. You must use at least three of the six “Strategies for Building Community” presented in our week 7 lecture for your lesson. Also, explain how using social learning will benefit students that participate in your lesson (provide at least two examples with references).

### **Evaluation**

Explain how you will evaluate the effectiveness of your lesson with technology. Provide two examples of evaluation, and explain what each is, how it will be administered and why it will be an effective means of evaluating your lesson. You must align your evaluation strategy with one of the evaluation models discussed in our week 13 lecture: Program Logic Model, Representative Logic Model, CIPP Evaluation Model, Kotter Change Management Model (Mixed methods evaluation). Please use at least two references when describing this alignment.

## **CROSS-DISCIPLINARY APPLICATIONS**

Many disciplines could use this type of activity, although it is designed for text-based assignments. For example, it could be used in English classes at all levels for creative

writing or poetry, History classes for term papers or Research classes for article summaries or literature reviews. Students can also make revisions to their original drafts using track changes so that both they and the instructor can examine the benefits of the AI activity. Instructors can also vary the persona of AI (helpful vs. critical evaluation vs. creative) according to the grade level and application of the assignment.

## DISCLOSURES

This OER does not contain any AI-generated content.

## REFERENCES

Kellam, H., & Perez Cortes, L. E. (2024). *The PROSE model for engineering artificial intelligence prompts: Constructive alignment with course content and objectives*. [Manuscript submitted for publication].

## CHAPTER 11.

# COMPARISON OF TERMS SYNONYMOUS WITH DESIGN OF EXPERIMENTS USING GENERATIVE AI

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### AUTHOR BIO

Rosie Kallie PhD is an Associate Professor of Instruction at the University of Texas at Arlington in the Industrial, Manufacturing, and Systems Engineering Department (IMSE) within the College of Engineering. She serves as a Faculty Facilitator with the Center for Research on Teaching and Learning Excellence as well as on the Undergraduate Curriculum Committee in IMSE. Her varied background includes experiences in manufacturing companies plus medical industry as well as math education from toddler ages through university graduate students. Dr. Kallie is a committed, compassionate educator who uses tools, technology, and the like to actively engage stu-

dents in the learning experience, particularly in statistics/engineering courses.

## COURSE CONTEXT

This activity is designed to be adaptable to a variety of context, but it was originally designed with the following student population in mind:

- **Discipline:** Industrial Engineering
- **Level:** Undergraduate
- **Course Name:** Engineering Research Methods
- **Modality:** In-person
- **Context:** Scaffolding modules of learning of advanced statistical methods including Analysis of Variance, Simple Linear Regression, Multiple Linear Regression, and Design of Experiments. The Design of Experiments represents an overarching framework in which the other statistical tools can be incorporated.
- **Number of Students:** 30-40

## ACTIVITY OVERVIEW

This activity is an active learning activity where students use Generative AI (e.g. ChatGPT or Microsoft CoPilot) to aid in researching similar terms regarding “Design of Experiments.” Design of Experiments (DOE), from an Engineering perspective, involves the detailed planning of a study where the results can be validated, and the analysis optimized. In other fields of study, such as Biology, Psychology, or Mathematics, “Design of Experiments” may be identified by a synonymous phrase or term (DOE synonyms)—statistical experiments, experimental design, designed experiments, to name a few.

Further, students will research multiple synonymous phrases with DOE then compare and contrast them, first in groups of two students, followed by a general class discussion. Student learning will benefit by students being able to access reference materials that they are assured is the appropriate DOE content, based on their exposure to synonymous terms for “Design of Experiments.” Students’ understanding of DOE concepts may improve when they are able to study an explanation from a different perspective (e.g. non-technical explanation of a DOE concept) alongside the technical explanations in the engineering textbook.

## DIRECTIONS

### For Instructors

- Context: Ronald Fisher's work began in genetics and statistics, two seemingly unconnected fields of study, over one hundred years ago. He meticulously laid the foundation for large portions of modern statistics. Knowledge of statistics—specifically, design of experiments—has found applications in diverse fields such as psychology, marketing, biology, mathematics, and engineering. Depending on the field of study, the study of experiments may be phrased, synonymously, as, “design of experiments,” “statistical experiments,” “experimental design,” or others.
- As a prelude to the activity, instructors can introduce the topic, Design of Experiments (DOE), for example, via an open access videos, that are viewed as a class:
- YouTube video, *Design of Experiments* by Green-Belt Academy (see References below), a high-level perspective of the DOE framework that is compatible with current engineering practices.
- YouTube video, *Life and Works of Ronald Aylmer Fisher Part 1/4* (see References below), a historical perspective, intended to engender a deeper appreciation of the founder of modern statistics.
- Upon conclusion of the videos, instructors give time for verbal reflections from volunteers and/or give each student time to respond.
- Following the video introduction to “Design of

Experiments” as described above, students will use Generative AI to find definitions of these three synonymous phrases: “design of experiments,” “statistical experiments,” “experimental design.” Students will record their findings.

- Students will be tasked with critically reading the definitions from 4. above, to determine how the three definitions are similar as well as how they differ. Students will record their findings as a short answer of less than one paragraph.
- Students will research the corresponding experimental steps required in each of the phrases. Students will record their findings in a brief summary.
- Students will submit their work, where indicated.
- Students will discuss their findings in small groups.
- At the conclusion of the student exercise, the instructor will facilitate a question/answer session where students share their insights from the Generative AI searches and/or Videos. The professor will seek to affirm common threads in the students’ verbal responses.

### **For Students**

For this in-class activity, you will locate the dated assignment “Defining Design of Experiments” on the Canvas Assignment page. It will be located with other low-stakes, participatory graded assignments (Class Engagement, CE). The activity is conducted as a Think-Pair-Share extended interactive exercise. You will be allotted

approximately 10 minutes for this brief research assignment.

- (Think: Online Search) You will use Generative AI (ChatGPT, Microsoft CoPilot) to find definitions of these three synonymous terms: “design of experiments,” “statistical experiments,” “experimental design.” Copy and paste your results into the CE assignment.
- (Think: Short Answer) After reviewing the three definitions, how are the definitions similar? How do the definitions differ? Type your answer in the CE assignment as less than one paragraph.
- (Think: Online Search) Use Generative AI (ChatGPT, Microsoft CoPilot) to find the components or required steps for each of the three synonymous phrases: “design of experiments,” “statistical experiments,” “experimental design.” Copy and paste your results into the CE assignment.
- (Submission to Canvas) You will submit your individual CEs onto Canvas where indicated.
- (Pair-Share, 6 minutes) Upon completion of the individual research, you will discuss your insights with your team member(s). What did you discover?



## BENEFIT TO STUDENTS

- Critical thinking
- Critical comparison
- Active listening
- Evaluation
- Verbal communication
- Interdisciplinary knowledge(Group Share)  
Finally, everyone will take turns sharing with the class a newfound discovery and/or insights from the activity. Students are encouraged to add to and/or affirm others' insights.

## ASSESSMENT

Students receive a participatory grade for this CE-type assignment: complete, incomplete, or unsatisfactory via Canvas options. No detailed rubric is required for CE assignments.

## CROSS-DISCIPLINARY APPLICATIONS

Since the activity is a high-level discussion without detailed mathematics, the activity can be applied in other fields of study that use Design of Experiment frameworks. Slight adjustments may be implemented, as the discretion of the instructor.

### **Psychology: Using Generative AI in Comparing Terms Synonymous with Planning Experiments**

This activity is an interactive learning activity where students use Generative AI (e.g. ChatGPT or Microsoft CoPilot) to aid in researching key terms regarding “Planning Experiments.” Further, students will research multiple, similar phrases then compare and contrast the definitions of the phrases, in teams of two or three students. Last, each student and/or team will share insights with the class. Student learning will benefit by being able to compare reference materials that are applicable to Planning Experiments; recognize the similarities of reference materials; gain insights from reference materials written from different perspectives.

## DISCLOSURES

This OER was not created using AI assistance. This OER does not contain AI-generated content.

## REFERENCES

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## CHAPTER 12.

# GENAI GENERATED SCIENCE INQUIRY LEARNING CYCLE/5E CURRICULA: CRITIQUE, REDESIGN, AND IMPLEMENT IN TEACHING

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ANN M.L. CAVALLO, PHD

### AUTHOR BIO

Ann M.L. Cavallo, Ph.D., is Dean *ad Interim* of the College of Education and Distinguished University Professor of Science Education at the University of Texas at Arlington (UTA). She earned her Ph.D. in Science Education from Syracuse University. She holds secondary school teacher certification in Biology, Chemistry, Earth Science, and General Science. At UTA she has designed, directed, and taught in undergraduate and graduate programs including courses on STEM teaching methods, educational psychology, education research methods, biology, physical science, and earth science. She has held several leadership posi-

tions including Assistant Vice Provost and Director of the Center for Research on Teaching and Learning Excellence, Associate Dean for Research in the College of Education, and she is founding Co-director of the UTeach Arlington Science and Mathematics Teacher Education Program. Dr. Cavallo's research investigates high school and college students' meaningful learning processes, scientific reasoning, self-efficacy, and their acquisition of conceptual understandings of science, particularly through inquiry-based teaching models and she has secured over \$15 million in grants and gifts to support her work. In honor of her accomplishments, Dr. Cavallo was inducted into the UTA Academy of Distinguished Scholars in 2016, and in 2023 received the honor of being named a lifetime Fellow by the *American Association for the Advancement of Science* (AAAS) for distinguished contributions to the advancement of science education, particularly for her work with STEM teachers.

## COURSE CONTEXT

This assignment, which actively engages students in using GenAI to construct inquiry curricula for teaching, is

designed to be adaptable to a variety of contexts, originally designed with the following student population in mind:

- **Discipline:** Teacher Education/Preparation – Science
- **Level:** Undergraduate, Graduate
- **Course Name:** Multiple Teaching Practices, Methods of Science Teaching (UTeach Arlington STEM Teacher Education Program)
- **Modality:** Online, Face-to-Face, or Hybrid
- **Context:** This GenAI assignment is designed for a science teacher preparation course. The course where this active assignment would be embedded is typically a methods of teaching course teacher education students take immediately prior to student teaching. The students in the course would have engaged in learning cycle/5E models with their instructor and analyzed each phase of the model, understanding the logic and sequence on how this model helps students construct sound understandings of scientific concepts through student-centered, team-based active learning, including the role of experimentation, argumentation, questioning, scaffolding, careful data collection and analyses, data interpretation, and applications.
- **Number of Students:** 15-30

## ACTIVITY OVERVIEW

In this assignment students work in small groups and use GenAI to generate an initial outline of a 5–7-day learning cycle/5E curriculum module (*Engage, Explore, Explain, Elaborate, Evaluate*) (Marek & Cavallo, 1997; Lawson, 2003; San Diego County Office of Education, retrieved January 2025) at the appropriate grade level and science subject area they will teach. The students will use the resulting GenAI learning cycle/5E lesson output to produce a critique, edit and further develop/detail/refine the 5E model, present to peers in the course, and potentially use in their classroom teaching.

## DIRECTIONS

### For Instructors

This assignment is designed for small groups of 2-3 students but can also be implemented as an individual assignment, or as an ungraded group activity. As a graded group assignment, the work will begin during class meetings with the expectation that the groups will also meet outside of class. For online synchronous classes, the instructor will create groups in Teams or similar video conferencing platform so students may work together during class time. For classes in any modality (face-to-face, synchronous, asynchronous) instructors should create channels in Teams for groups to remotely work

together outside of class meeting times, especially for those where meeting in person is not feasible. The activity of this assignment will begin during class, with the second half of one to two class meetings devoted to work on this project; and two class meetings set aside toward the end of the semester for presentations.

Students are to be sorted into their groups according to common or closely related science subject areas, such as biology, chemistry, physics, earth/environmental science. Students are to enter the following prompt into their GenAI application (ChatGPT, Copilot): ***Write an inquiry-based learning cycle/5E lesson on \_\_\_\_\_*** (in the blank students select the name of their concept, such as “density” or “convection” or “Bernoulli’s principle” as examples). The students should specify the grade level and other details as needed. As an alternative, the instructor can enter the prompts for the class, then give the student groups the GenAI outputs to work on, thus exerting more control over the concepts and consistency of sophistication assigned to the groups; or the instructor can list the science concepts to choose from for the students.

The GenAI output will be a description, in outline form, of a learning cycle/5E lesson with activities or text described within the 5 phases: *Engage, Explore, Explain, Elaborate, Evaluate*. Prompting GenAI to write an inquiry-based learning cycle/5E lesson can produce outputs that are vague, underdeveloped, flawed, and often contradict the theoretical foundation of this well-known inquiry model. An example of learning cycle/5E on density generated with the given prompt from ChatGPT is at this link: [GenAI Learning Cycle/5E Model](#).



Once the GenAI output is received from their prompt, students review and critique the 5E inquiry lesson using their knowledge of this pedagogical model learned in class and accuracy of the scientific content. An example of a flaw in the example learning cycle/5E on density in the GenAI output is in the *Explain* phase that the **teacher** *is to explain* or lecture the findings the students observed in the *Explore* phase, which when in fact the **students** *are to examine their findings and discuss the meaning, constructing for themselves an explanation of the concept they observed/interpreted*. It is expected students will detect such flaws, while at the same time, find some useful ideas and activities from the GenAI output they may use in designing their inquiry 5E models. The students may complete their critique on a clean copy of the GenAI learning cycle/5E output, with their critique written in bold or in a different, accessible font color within the text of the GenAI lesson output. An example of the same learning cycle/5E GenAI output on density, this time including the critique in another font color is at this link: [Critique of GenAI Learning Cycle/5E Model](#). The students revise, further develop, and expand upon the GenAI learning cycle/5E output to develop an educationally sound inquiry curriculum module with all 5 phases detailed, to be used in teaching. The fully developed 5E model will also include a list of materials, special instructions for the teachers, and student questions streamed throughout the 5E module that guide and scaffold their science students through the learning of concepts (showing anticipated responses). The final 5E curriculum will also include any blank graphs or charts they will need students to complete in the appropriate phases in the 5E, student assessments/evaluations, accommodations for students, technology integrations,

and other details. An example of a complete, model learning cycle on the concept of density was published by the author of this chapter in *The Science Teacher* (Cavallo & Laubach, 1998), and NSTA publication with the full text accessible through the UTA and most university libraries (see references).

Upon completion of their learning cycle/5E curriculum module, each group will make a 20-minute presentation as follows:

Show the original GenAI output.

Show and explain the groups' critique of the GenAI output, particularly how it may have deviated from the learning cycle/5E framework and psychology of how students learn as discussed in class. The students will do so by showing comments on a second copy of the original GenAI output in bold or in a different accessible font color next to the original output explaining how and why the GenAI learning cycle/5E output needed to be transformed.

- Briefly show and share the transformed *redesigned* learning cycle/5E as a fully developed, pedagogically sound learning curricula to extend over 5-7 days pointing out ideas generated by GenAI judged to be useful and those discarded as inappropriate or unsound. This redesigned model includes written questions guiding students to collect and analyze observations and data, any charts and graphs students would complete, with anticipated responses or an answer key.
- Demonstrate a *portion* of the learning cycle/5E

model Explore phase, engaging classmates in the activity of this phase. (Note: Classmates may provide verbal feedback upon the conclusion of presentations for presenting group members to make final adjustments to their learning cycle/5E curriculum module).

The sections of this assignment described in *a through d* above will be completed, submitted and graded as a single assignment for each group. However, contributing to each student's grade is an *additional section*, which is teamwork feedback and evaluation from each student that includes a self-evaluation and an evaluation of each group member's contributions to the assignment. Therefore, though all members of the group may earn the same grade for above sections *a through d*, the teamwork evaluations are also factored into each student's overall grade for the assignment. The teamwork evaluations may differentiate grades among team members on the assignment according to their contributions. Example scoring templates are included in the *Assessment* section of this chapter.

### **For Students**

In this assignment divide into small groups of 2 to 3 classmates who are in common science subject areas (biology, chemistry, physics, earth/environmental science). This activity-based assignment will begin during class, with the second half of one to two class meetings devoted to work on this assignment; and two class meetings set aside toward the end of the semester for presentations. Therefore, it is expected that group members will also work on this assignment outside of class meetings to completion. To work with group members outside of class meetings,

your instructor will set up Teams channels, or if feasible, you may choose to meet in person.

Once the assignment is fully completed, the initial grade earned will be the same for all group members. However, upon completion of the assignment, each group member will complete 1) a self-evaluation of your contributions and 2) an evaluation of each group member's contribution to the assignment. The scores and feedback received on contributions will be factored into each group member's grade, which may differentiate the final assignment grade earned between members. (This grade differentiation will be further clarified in the scoring template).

This group assignment includes several parts that will be presented to the class. Each group will have 20 minutes to present. Details of this assignment will be described further by your instructor.

- Learning Cycle/5E Curriculum Model
- GenAI learning cycle/5E lesson output
- Critique of the GenAI output written on a copy of the original GenAI output either in bold or in a different (accessible) font color, describing useful elements, flaws, and ways to transform the GenAI output according to the model learned in the course.
- Final detailed and fully developed 5-7-day learning cycle/5E curriculum model.
- Learning Cycle/5E Explore Phase Teaching Presentation: Demonstrate a brief version of the Explore phase engaging classmates in portions of

the activity.

- Teamwork Feedback and Evaluation Form: Using the given form, submit a self-evaluation and team member evaluations and comments on contributions to the assignment.

## BENEFIT TO STUDENTS

Critical thinking, creative thinking, curriculum design, teaching skill development, teamwork, psychology of learning, instructional strategies, organization and leadership skills

## ASSESSMENT

A rubric or scoring template is recommended for the assessment of this assignment. The links below provide an example of a rubric that may be modified to assess this project and an example teamwork evaluation for self and group member evaluations of assignment contributions.

- [GenAI Learning Cycle/5E Assignment Scoring Template](#)
- [GenAI Learning Cycle/5E Assignment Teamwork Feedback Form](#)

## CROSS-DISCIPLINARY APPLICATIONS

This active assignment can be modified for use in preservice or inservice teacher education courses in any subject area. For example, this same assignment may and has been used in mathematics teacher education. The instructional model can vary according to course and discipline, for example, the GenAI prompt could ask for a Project Based Learning model or simply a lesson plan in another discipline for critique, further development, and field testing.

## DISCLOSURES

Mavs Open Press defines work as **AI-assisted** when author-created content is enhanced, organized, or edited using an AI tool. This OER **was not** created using AI assistance. However, the learning cycle/5E lesson at the link used for demonstration purposes was generated by ChatGPT.

## RESOURCES AND REFERENCES

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## CHAPTER 13.

# UNLOCK THE STORY: AN AI-POWERED ELA ESCAPE ROOM

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Dr. Hugh Kellam is an Assistant Professor in the College of Education at the University of Texas at Arlington. He is the creator and program director of the Instructional and Learning Design Technology Master's program. He completed his Ph.D. at the University of Ottawa in Teaching, Learning and Evaluation with a focus on adult learning and instructional design with learning technologies. He has written the book *the P-I-E Model: Personalized and Inclusive Engagement for the Design, Delivery and Evaluation of University Online Learning*. He has also worked as a corporate training director and has published articles on virtual communities of practice, the PROSE model for AI prompt design and instructional design for online learning environments.

## COURSE CONTEXT

This activity is designed to be adaptable to a variety of

contexts, but it was originally designed with the following student population in mind:

- **Discipline:** English Language Arts
- **Level:** High School and Undergraduate
- **Course Name:** English
- **Modality:** Face-to-Face or Online
- **Context:** This AI-powered escape room activity is ideal for an English Language Arts course during topics on literary analysis and interpretation, helping students deepen their understanding of themes, character motivations, and narrative structure through interactive, game-based learning.
- **Number of Students:** Individual or team assignments

## ACTIVITY OVERVIEW

This activity engages students in literary analysis and critical thinking by immersing them in an interactive narrative escape room scenario where AI provides clues, feedback, and adaptable hints. Through a series of flexible, text-based prompts, students practice skills like character analysis, theme identification, and creative interpretation while AI scaffolds their learning and promotes problem-solving. Designed to be customizable,

this activity allows teachers to tailor content to specific texts (such as novels, poems, songs, movies, video games) and learning goals, which can be adapted for other disciplines too—such as history, science, or social studies—where critical analysis and contextual understanding are essential.

## DIRECTIONS

### For Instructors

#### *Plan and Customize the Escape Room*

- **Choose the Text:** Decide what text (or excerpt[s] from a text) you will use for your activity. In general, you might want to pick a text that students have already been familiarized with. The definition of “texts” here includes novels, poems, songs, movies, and video games. You may use your own or adopt and adapt from the examples offered in the appendix below. For the illustrative example, we used *an excerpt from The Tell-Tale Heart*.
- **Select the Learning Objectives:** Pick the learning goals you want students to achieve. You may use your own or adopt and adapt from the examples offered in the appendix below. For the illustrative example, we used the learning objective of *Dialogue and its Role in Character Development: Analyze dialogue to determine what it reveals about characters*,

*relationships, and motivations, as well as how it drives the plot or introduces conflict.*

- **Define the Story Scenario:** Decide on the escape room's narrative framework. For example, students could be "trapped in a mysterious library" or "lost within a novel's storyline." You may use your own or adopt and adapt from the examples offered in the appendix below. For the illustrative example, we used *Inside the Author's Mind: Students are "trapped" in the mind of a famous author, where they must solve puzzles related to the author's life, writing style, and common themes to escape.*
- **Select Puzzle Types:** Pick puzzle activities that align with your goals. You may use your own or adopt and adapt from the examples offered in the appendix below. For the illustrative example, we used *Foreshadowing Detection: Students identify hints of foreshadowing within passages to predict future events or outcomes, unlocking the next stage of the puzzle.*
- **Develop Text Excerpts and Clues:** Prepare excerpts, images, or symbols from the selected text to serve as clues in each puzzle. Ensure each clue is relevant to your chosen objectives. You may use your own or adopt and adapt from the examples offered in the appendix below. For the illustrative example, we used *Unreliable Narrator Excerpts: Use passages from an unreliable narrator where students evaluate the narrator's credibility and interpret the "truth" behind the narrative.*

- "I knew the sound well. Many a night, just

at midnight, when all the world slept, it has welled up from my own bosom, deepening, with its dreadful echo, the terrors that distracted me. I say I knew it well. I knew what the old man felt, and pitied him, although I chuckled at heart.”

### *Set up the AI Interaction*

- **Consider creating tiered hints:** Tiered hints help scaffold student learning. Each hint should progressively increase in specificity to support students who are struggling. You may use your own or adopt and adapt from the examples offered in the appendix below. For the illustrative example, we structured our hints in the following way: *Start by asking students to think about what the narrator’s repeated phrases (‘I knew it well’) reveal about his mindset and emotions. Next, guide them to examine any specific words that might hint at the narrator’s dark intentions or inner turmoil. If they need further help, suggest they consider how the narrator’s pity and ‘chuckling at heart’ foreshadow his complex feelings about his actions toward the old man.*
- **Draft AI Prompts:** Write prompts that instruct the AI which elements you have chosen and specify how the AI should guide students without revealing answers outright. The sample prompt shown below was built by selecting the following elements from the steps outlined above:
- Illustrative example:
  - “You are an AI assistant helping high school

*students navigate an interactive English Language Arts activity that is an escape room. Explain to the student that they are exploring The Tell-tale Heart and that they are ‘trapped’ in the mind of Edgar Allan Poe. Describe what this place looks like and say that they need to solve puzzles related to the themes of his work to escape. As they successfully answer your questions, tell them they have made it to a new area of the author’s mind and also describe it. Then, at the end, describe how they got out and successfully escaped. They are analyzing the role of dialogue and how it reveals character motivations, relationships, and drives the plot. Their goal in this puzzle is to detect foreshadowing in a specific text excerpt.*

- *Using this excerpt from The Tell-tale Heart:*
- *‘I knew the sound well. Many a night, just at midnight, when all the world slept, it has welled up from my own bosom, deepening, with its dreadful echo, the terrors that distracted me. I say I knew it well. I knew what the old man felt, and pitied him, although I chuckled at heart.’*
- *Please guide students in analyzing this passage by prompting them to consider:*
- *What the narrator’s dialogue and reflections reveal about his character and motivations.*
- *Any hints in this dialogue that might foreshadow future events or reveal inner conflicts.*
- *How the choice of words in this passage drives the sense of dread and foreboding, hinting at*

*coming conflict.*

- *Approach each prompt once at a time. If students seem to need help, provide gradual hints for each part of the analysis:*
- *Start by asking students to think about what the narrator's repeated phrases ('I knew it well') reveal about his mindset and emotions.*
- *Next, guide them to examine any specific words that might hint at the narrator's dark intentions or inner turmoil.*
- *If they need further help, suggest they consider how the narrator's pity and 'chuckling at heart' foreshadow his complex feelings about his actions toward the old man.*
- *Your responses should encourage critical thinking and analysis without giving away the answers outright. Wait for students to respond before proceeding through the escape room or going to the next prompt or hint."*
- **Test the AI Setup:** Run a trial with your AI system (e.g., ChatGPT) to ensure it responds accurately and effectively to your prompts. Once you have prompts and hints, test them by simulating student responses. Input likely student questions and responses to ensure the AI provides appropriate hints without revealing answers. Fine-tune your prompts to make hints more specific or indirect based on how the AI responds. Test the progression from subtle hints to more direct ones, adjusting as needed to maintain a supportive but challenging experience for students.

- **Introduce the Activity to Students:** Set the scene by introducing the escape room narrative and explaining that students will need to solve ELA-based narrative puzzles to “escape.” Mention the AI’s role as a “guide” that offers clues and hints. You might consider implementing this as a group-based activity, so you would also divide students into small groups and potentially assign roles (e.g., “writer or respondent to the AI”) to encourage collaboration and focus within each group.
- **Create Copies of the Prompt for Each Group:** Copy and paste the prompt, sharing it separately with each student group. They can then interact with their own instance of the escape room.
- **Facilitate Puzzle Progression:** Let students discuss and attempt responses. They can request hints from the AI as needed. Move between groups, encouraging collaboration and checking understanding. Prompt students to explain their reasoning to help clarify their thinking. Repeat until all groups have finished.
  - **Getting Started:** Students interact with the AI, which introduces the escape room scenario and first puzzle.
  - **Progressing:** Students solve ELA-based puzzles, with the AI providing hints and confirmations as they advance.
  - **Escaping:** The escape is complete when students solve the final puzzle, prompting an AI message like “Congratulations! You’ve escaped!” The activity length will vary



based on the prompt design. You may use your own prompt design or adopt and adapt from the examples offered in the appendix below.

- **Reflect and Debrief:** After the activity, guide a reflection session where students discuss the strategies they used, the clues they missed, and how the AI’s hints helped or hindered their understanding. Have students individually write a short reflection on what they learned, focusing on the ELA skills developed and their interaction with the AI.

### **For Students**

Here is a sample script that might be used to explain this activity in a syllabus.

#### **Title:** AI-Powered ELA Escape Room

**Activity Overview:** This escape room activity is designed to engage you in critical thinking and literary analysis. Working in small groups, you’ll analyze selected text excerpts to solve puzzles guided by an AI assistant. You’ll apply skills such as identifying themes, analyzing dialogue, and interpreting foreshadowing to reach the final “escape” stage.

#### **Instructions:**

- **Join Your Group:** Meet with your assigned group members and decide on group roles, such as the primary “writer” or “AI responder,” to ensure smooth interaction.

- **Get Started with the AI:** Your group will interact with the AI, which will set the scene and introduce the first puzzle. Use the text provided, clues, and hints from the AI to solve each challenge. Remember, the AI is here to help guide you, so feel free to ask for hints if you get stuck.
- **Progress Through the Puzzles:** As you solve each puzzle, the AI will confirm and guide you to the next part of the escape room. Engage in group discussion to analyze each excerpt, looking closely at elements like character motivations, themes, and foreshadowing.
- **Complete the Escape:** You'll know you've successfully escaped when the AI provides a congratulatory message. Each group will likely experience different paces and interactions based on the AI's responses and the level of hints needed.
- **Reflection:** After escaping, individually write a short reflection about the skills you practiced, the clues you used, and how the AI's hints helped your analysis. Consider how this exercise improved your understanding of literary analysis.

### **Activity Goals:**

- Practice critical literary analysis skills
- Foster collaborative problem-solving within groups
- Engage in a narrative-driven experience that builds ELA proficiency

### **Assessment:**

- Completion of the escape room activity
- Quality of group discussion and collaborative analysis
- Reflection on insights gained from the activity and AI interaction

## BENEFIT TO STUDENTS

- **Critical Thinking:** Analyzing text passages, identifying foreshadowing, and interpreting characters' motivations and underlying themes.
- **Collaboration:** Working in groups to discuss interpretations, share insights, and collectively solve puzzles.
- **Digital Literacy:** Interacting with AI as a guide, understanding how to seek and use digital resources effectively to aid comprehension.
- **Close Reading:** Carefully examining text to identify nuanced details, patterns, and literary devices that deepen understanding.
- **Empathy:** Considering character perspectives, motivations, and internal conflicts, promoting a deeper understanding of complex emotions and relationships.
- **Inference and Prediction:** Making evidence-based predictions about plot and character actions based on textual clues.
- **Creativity:** Interpreting and reimagining text ele-

ments, especially in genre or narrative experimentation puzzles.

- **Metacognition:** Reflecting on reasoning processes and analyzing problem-solving strategies to improve understanding.
- **Communication:** Articulating thoughts and interpretations clearly to peers and explaining reasoning behind puzzle solutions.

## CROSS-DISCIPLINARY APPLICATIONS

### History

**Scenario:** Students are “trapped in a time portal” and must solve historical puzzles to return to the present. Each puzzle represents a different era or historical event.

### Puzzle Types:

- **Primary Source Analysis:** Analyzing historical documents, letters, or speeches to understand the perspectives and motivations of historical figures.
- **Cause and Effect:** Reconstructing the order of events leading to significant outcomes, such as wars or social movements.
- **Map and Artifact Analysis:** Interpreting historical maps or artifacts to gain insight into the culture, technology, or events of a period.

**Skills Developed:** Critical thinking, contextual analysis, empathy for historical perspectives, and cause-effect reasoning.

### Science

**Scenario:** Students are “stranded in a research lab” and must solve scientific puzzles to escape. Each puzzle is connected to different scientific concepts or experiments.

#### Puzzle Types:

- Hypothesis and Prediction: Making predictions based on scientific principles or experimental data.
- Lab Procedure Analysis: Identifying errors in a lab procedure or correcting steps in a scientific method sequence.
- Classification and Analysis: Grouping organisms, elements, or chemical reactions based on scientific criteria.

**Skills Developed:** Scientific reasoning, analytical thinking, experimental design, and application of scientific knowledge.

### Mathematics

**Scenario:** Students are “locked in a mathematician’s study” and need to solve math puzzles and logic problems to unlock each stage.

#### Puzzle Types:

- Problem-Solving and Logic: Solving algebraic or geometric problems, with each correct answer

providing clues to the next puzzle.

- **Pattern Recognition:** Identifying sequences, patterns, or properties in numbers, shapes, or equations.
- **Real-World Application:** Solving problems that relate to real-world scenarios, like calculating distances, measurements, or probabilities.

**Skills Developed:** Logical reasoning, problem-solving, pattern recognition, and mathematical fluency.

## DISCLOSURES

This chapter was written with assistance from AI (ChatGPT), which supported the ideation process for the activity and ensured that ideas were presented consistently in terms of length, tone, and grammatical accuracy. The sections discussing cross-disciplinary applications appear as they were generated by ChatGPT.

## APPENDIX A

### List of examples to draw from to customize prompts

#### Some Possible Texts:

- **Novels:**
  - “To Kill a Mockingbird” by Harper Lee

- Themes: Racism, justice, moral growth
- “The Great Gatsby” by F. Scott Fitzgerald
- Themes: The American Dream, class disparity, love
- “The Hunger Games” by Suzanne Collins
- Themes: Dystopia, survival, resistance
- “The Catcher in the Rye” by J.D. Salinger
- Themes: Alienation, adolescence, identity
- “The Hate U Give” by Angie Thomas
- Themes: Racism, activism, police brutality

- **Poems:**

- “The Road Not Taken” by Robert Frost
- Themes: Choices, individualism, reflection
- “O Captain! My Captain!” by Walt Whitman
- Themes: Leadership, loss, patriotism
- “Still I Rise” by Maya Angelou
- Themes: Resilience, race, self-worth
- “The Love Song of J. Alfred Prufrock” by T.S. Eliot
- Themes: Alienation, indecision, modern life
- “Sonnet 18” by William Shakespeare
- Themes: Love, beauty, immortality

- **Songs (Lyrics):**

- “Imagine” by John Lennon

- Themes: Peace, unity, hope for a better world
- “Blowin’ in the Wind” by Bob Dylan
- Themes: Civil rights, freedom, social justice
- “Rise Up” by Andra Day
- Themes: Perseverance, empowerment, overcoming adversity
- “The Times They Are A-Changin’” by Bob Dylan
- Themes: Social change, progress, rebellion
- “Hallelujah” by Leonard Cohen
- Themes: Love, faith, complexity of human experience

- **Movies:**

- “Dead Poets Society” (1989)
- Themes: Individuality, conformity, inspiration through literature
- “The Outsiders” (1983)
- Themes: Class struggle, identity, friendship (adapted from S.E. Hinton’s novel)
- “The Lion King” (1994)
- Themes: Responsibility, coming of age, family
- “The Pursuit of Happyness” (2006)
- Themes: Perseverance, the American Dream, overcoming adversity



- “The Truman Show” (1998)
- Themes: Reality vs. illusion, media, individual freedom
- **Video Games:**
  - “What Remains of Edith Finch”
  - Themes: Family, loss, storytelling, fate
  - “Journey”
  - Themes: Exploration, perseverance, connection
  - “Life is Strange”
  - Themes: Time, choices, friendship, trauma
  - “The Last of Us”
  - Themes: Survival, humanity, loss, relationships
  - “Papers, Please”
  - Themes: Moral choices, authority, human rights

### **Some Possible Learning Objectives:**

- **Literary Devices Identification and Analysis:** Recognize and analyze the use of literary devices like metaphor, simile, alliteration, personification, and irony within a text.
- **Mood and Tone Analysis:** Examine how word choice, sentence structure, and setting contribute to the mood and tone of a passage, then analyze how these elements affect the story’s meaning.

- **Author's Purpose and Perspective:** Describe why an author wrote a text, identifying purpose (to inform, entertain, persuade) and perspective, as well as how this influences content and tone.
- **Theme Comparison Across Texts:** Compare themes between the primary text and another work, and identify common elements or contrasting viewpoints on similar themes (e.g., love, conflict, or resilience).
- **Setting and Its Impact on Plot or Character Development:** Explore how the setting influences events, character actions, and plot development, or imagine how changing the setting would alter the story.
- **Conflict and Resolution Analysis:** Identify the central conflict(s) and analyze how it is resolved (or not) and discuss how this shapes the overall narrative and its message.
- **Symbolism and Imagery Exploration:** Identify symbols and imagery within a text, and examine how they contribute to deeper meanings or reinforce key themes.
- **Poetic Structure and Interpretation:** Analyze aspects of poetic structure, like rhyme scheme, meter, stanza format, and enjambment, and how these elements contribute to the poem's meaning.
- **Dialogue and its Role in Character Development:** Analyze dialogue to determine what it reveals about characters, relationships, and motivations, as well as how it drives the plot or introduces conflict.

- **Inferencing and Prediction:** Use context clues to predict future plot points or deduce hidden meanings within the text.

### **Some Possible Story Scenarios:**

- **Inside the Author's Mind:** Students are “trapped” in the mind of a famous author (e.g., Edgar Allan Poe, Jane Austen), where they must solve puzzles related to the author's life, writing style, and common themes to escape.
  - Learning Focus: Author's purpose, historical context, and literary style.
- **The Secret Garden of Symbols:** Students find themselves in a mystical garden where each plant, statue, or animal represents a different literary symbol or theme. To escape, they must correctly interpret and connect symbols with themes.
  - Learning Focus: Symbolism, thematic analysis, and imagery.
- **Characters on Trial:** Students enter a courtroom where literary characters from different works are on trial. They must analyze motives, make inferences, and defend their character's actions to “free” them.
  - Learning Focus: Character analysis, motivation, and moral reasoning.
- **The Time-Traveling Journal:** Students have stumbled upon a magical journal that transports them to various historical settings of classic literature. To return, they must solve puzzles related to

how the setting influences plot and characters.

- Learning Focus: Setting's role in plot development, historical context.
- **The Cursed Manuscript:** A “haunted” manuscript traps students within its pages. They must interpret literary devices, solve riddles about foreshadowing and plot twists, and uncover hidden messages to break the curse.
  - Learning Focus: Literary devices, foreshadowing, plot structure.
- **Plot Architect's Workshop:** Students are trapped in the workshop of an ancient “plot architect” who designs storylines. They need to identify elements of plot, arrange events in logical sequences, and suggest possible resolutions to unlock the exit.
  - Learning Focus: Plot structure, logical sequencing, conflict and resolution.
- **The Room of Riddles and Rhymes:** Students are in a world where everything is in rhyme and verse, and they must decode poetic structure, identify rhythm patterns, and interpret stanzas to escape.
  - Learning Focus: Poetic structure, meter, rhyme scheme, interpretation.
- **Library of Lost Voices:** This “library” is filled with the voices of various narrators. To escape, students must identify narrative perspective and tone, comparing and contrasting the voices to unlock clues.
  - Learning Focus: Narrative perspective,

tone, and point of view.

- **The Labyrinth of Literary Genres:** Students are wandering through a maze where each room represents a different literary genre (mystery, fantasy, romance, etc.). They must identify and analyze genre-specific elements to find their way out.
  - Learning Focus: Genre analysis, structure, and stylistic features.
- **The Hidden Plot Prophecy:** A mysterious prophecy within a text holds the key to escape. Students must interpret clues within the text to understand themes, symbols, and characters that point to the “propheesied” ending.
  - Learning Focus: Theme analysis, plot prediction, inference.

### **Some Possible Puzzle Types:**

- **Quote Matching and Interpretation:** Students match significant quotes to the correct character, event, or theme within a text. They must then explain the meaning and relevance of each quote to progress.
  - Focus: Deepen understanding of character voice, theme, or tone.
- **Mood and Tone Classification:** Students are presented with various passages and must identify the mood and tone, explaining how specific words and phrases contribute to the atmosphere.
  - Focus: Mood and tone analysis, vocabulary, and context.

- **Foreshadowing Detection:** Students identify hints of foreshadowing within passages to predict future events or outcomes, unlocking the next stage of the puzzle.
  - Focus: Understanding plot structure, suspense, and anticipation in storytelling.
- **Literary Device Scavenger Hunt:** Students locate examples of literary devices (e.g., simile, metaphor, irony) within a text, identifying how each device enhances the story's impact.
  - Focus: Literary devices, analysis of figurative language.
- **Contextual Vocabulary Clues:** Students use context clues to define challenging vocabulary from a passage, then use their understanding to unlock a riddle or decipher a code.
  - Focus: Vocabulary development, contextual inference, and comprehension.
- **Timeline Reconstruction:** Students arrange events or key moments in chronological order to demonstrate their understanding of plot development and cause-effect relationships.
  - Focus: Plot sequencing, comprehension of narrative structure.
- **Allusion Identification:** Students identify and explain allusions within the text, connecting them to broader cultural or literary references to progress through the escape room.
  - Focus: Allusions, intertextuality, and contextual analysis.

- **Dialogue Attribution and Analysis:** Students are given lines of dialogue and must determine who said each line, what it reveals about the character, and its significance within the plot.
  - Focus: Characterization, dialogue analysis, inference.
- **Setting Influence Puzzle:** Students analyze how specific aspects of the setting influence character actions or plot events, discussing alternate outcomes in a different setting.
  - Focus: Setting analysis, cause and effect, alternative perspectives.
- **Conflict Classification and Resolution:** Students identify various types of conflict within the story (e.g., person vs. person, person vs. society) and determine how each is resolved or left open-ended.
  - Focus: Conflict types, resolution analysis, thematic understanding.
- **Point of View Shift:** Students rewrite a short passage from a different point of view (e.g., first-person to third-person), discussing how the change affects interpretation and reader engagement.
  - Focus: Point of view, narrative voice, stylistic experimentation.
- **Character Relationship Mapping:** Using clues, students map relationships between characters, examining how these relationships drive the plot or reveal underlying themes.
  - Focus: Character relationships, thematic

analysis, structural connections.

- **Irony and Paradox Recognition:** Students locate examples of irony or paradox within the text and explain their significance or effect on the reader's understanding.
  - Focus: Irony, paradox, critical interpretation.
- **Theme Evolution Tracking:** Students trace the development of a theme across multiple passages, noting how it changes or is reinforced throughout the story.
  - Focus: Theme evolution, textual evidence, critical thinking.
- **Genre Identification and Subversion:** Students identify elements of genre within a text and discuss any ways the story subverts or challenges traditional genre expectations.
  - Focus: Genre analysis, narrative structure, literary expectations.

### Some Possible Tiered Hints:

- **Character Analysis Puzzle**
  - Hint 1: "Look closely at how the character responds to others. Are they being sincere or hiding something?"
  - Hint 2: "Notice any recurring phrases or descriptions about this character. What might these suggest about their emotions or intentions?"



- Hint 3: “Think about how other characters react to this one. Do they trust or mistrust them? Why?”

- **Theme Identification Puzzle**

- Hint 1: “Consider what the protagonist learns throughout the story. How does this connect to a possible theme?”
- Hint 2: “Are there any recurring settings, colors, or objects? What could they represent on a deeper level?”
- Hint 3: “Think about how the story might change if this idea or symbol were removed. Does it alter the message?”

- **Foreshadowing and Prediction Puzzle**

- Hint 1: “Is there anything unusual or out of place in this scene that could hint at future events?”
- Hint 2: “Think about similar moments from earlier in the story. How did they set up later events?”
- Hint 3: “Is there a particular phrase or object that appears here and in other parts of the story?”

- **Symbol Analysis Puzzle**

- Hint 1: “Consider why the author might have chosen this particular object or image. What does it bring to mind?”
- Hint 2: “Think about how this symbol might relate to the protagonist’s journey or

challenges.”

- Hint 3: “Would this story feel different if this symbol were absent? How does it enhance the theme?”

- **Mood and Tone Analysis Puzzle**

- Hint 1: “Look for adjectives or verbs that set a particular atmosphere. Do they feel calm, tense, or something else?”
- Hint 2: “Is the language formal or casual? How does this affect the tone and mood of the scene?”
- Hint 3: “Consider if this tone is consistent throughout the story or unique to this passage. What might this change imply?”

- **Narrative Perspective Puzzle**

- Hint 1: “Think about how much the narrator knows or chooses to reveal. Does this create any biases?”
- Hint 2: “Are there moments where the narrator’s attitude shifts? How might this affect your view of other characters?”
- Hint 3: “What would be different if another character, like the protagonist’s friend or a stranger, narrated this scene?”

## LINKS BY CHAPTER

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Links by chapter are provided in the order that they appear in the chapter.

### CHAPTER 3

- How to add a rubric to an assignment in Canvas: <https://community.canvaslms.com/t5/Instructor-Guide/How-do-I-add-a-rubric-to-an-assignment/ta-p/1058>
- How to add a rubric to a discussion in Canvas: <https://community.canvaslms.com/t5/Instructor-Guide/How-do-I-add-a-rubric-to-a-graded-discussion/ta-p/1062>

### CHAPTER 7

- SET-M (Simulation Evaluation Tool-Modified): <https://www.healthysimulation.com/tools/evaluating-healthcare-simulation/simulation-effectiveness-tool-modified-set-m/>

### CHAPTER 9

- Center for Research on Teaching and Learning Excellence: <http://utacrtle.org/>

### CHAPTER 12

- GenAI Learning Cycle/5E Model: <https://mavma->

[trix.uta.edu/crtle\\_pub/4/](https://mavmatrix.uta.edu/crtle_pub/4/)

- Critique of GenAI Learning Cycle/5E Model:  
[https://mavmatrix.uta.edu/crtle\\_pub/1/](https://mavmatrix.uta.edu/crtle_pub/1/)
- GenAI Learning Cycle/5E Assignment Scoring  
Template: [https://mavmatrix.uta.edu/crtle\\_pub/2/](https://mavmatrix.uta.edu/crtle_pub/2/)
- GenAI Learning Cycle/5E Assignment Teamwork  
Feedback Form: [https://mavmatrix.uta.edu/crtle\\_pub/3/](https://mavmatrix.uta.edu/crtle_pub/3/)

## AI DISCLOSURE

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